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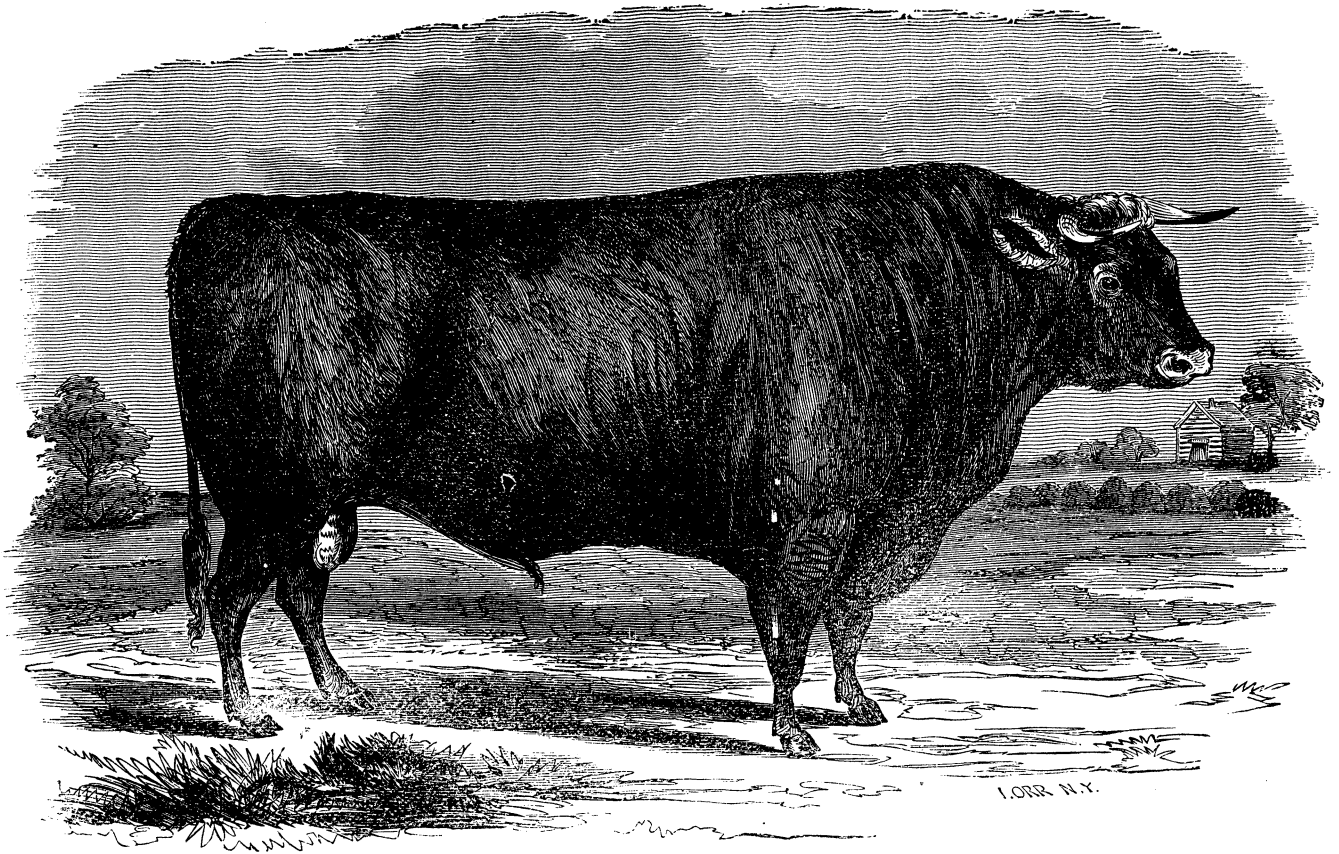

THE NORTH DEVON BULL "ZACK TAYLOR."

Owned by Wm. H. Miller, of Moscow, Hillsdale County, Mich., and originally brought into the State by O. Blackman, Esq.

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TRANSACTIONS

OF THE

STATE AGRICULTURAL SOCIETY

OF

MICHIGAN;

WITH REPORTS OF

COUNTY AGRICULTURAL SOCIETIES,

FOR THE YEAR 1858.

PUBLISHED BY ORDER OF THE LEGISLATURE.

VOL. X.

LANSING:
Hosmer & Kerr, Printers to the State.
1860.

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TENTH ANNUAL REPORT

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY.

1858.

OFFICE OF MICHIGAN STATE AGRICULTURAL SOCIETY,
Detroit, November 1, 1859.

To the Hon. N. G. ISBELL,

Secretary of State:

SIR—In accordance with the law, and the directions of the Executive Committee, I herewith transmit to you the Tenth Annual Report of the Michigan State Agricultural Society.

I am, very respectfully, yours,

R. F. JOHNSTONE,

Secretary.

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NAMES OF EX-PRESIDENTS

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY,

SINCE ITS ORGANIZATION, 1849.

EPAPHRODITUS RANSOM, Kalamazoo, ...1849.
EPAPHRODITUS RANSOM, Kalamazoo, ...1850.
EPAPHRODITUS RANSOM, Kalamazoo, ...1851.
JAMES B. HUNT, Pontiac, Oakland County, ...1852.
JOS. R. WILLIAMS, Constantine, St. Joseph Co., .1853.
GEO. C. MUNRO, Jonesville, Hillsdale County, ...1854.
A. Y. MOORE, Schoolcraft, Kalamazoo County, ...1855.
M. SHOEMAKER, Jackson, Jackson County, ...1856.
JAMES BAYLEY, Troy, Oakland County, ...1857.
CHARLES DICKEY, Marshall, Calhoun County, ..1858.
CHARLES DICKEY, Msrshall, Calhoun County, ..1859.

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LIST OF OFFICERS OF THE SOCIETY FOR 1859.

President—CHARLES DICKEY, Marshall, Calhoun Co.

Treasurer—BENJ. FOLLETT, Ypsilanti, Washtenaw Co.

Secretary—R. F. JOHNSTONE, Detroit, Wayne County.

EXECUTIVE COMMITTEE.

Members whose Terms expire on the 31st December, 1859.

Name.	Post Office.	County.
A. N. Hart,	Lapeer,	Lapeer.
J. B. Crippen,	Coldwater,	Branch.
W. H. Montgomery,	Ida,	Monroe.
J. H. Richardson,	Worth,	Tuscola.
E. N. Wilcox,	Detroit,	Wayne.
Horace Welsh,	Ypsilanti,	Washtenaw.
D. Henderson,	Allegan,	Allegan.

Members whose Terms expire on the 31st December, 1860.

H. G. Wells,	Kalamazoo,	Kalamazoo.
Archibald Jewell,	Dowagiac,	Cass.
A. S. Berry,	Adrian,	Lenawee.
H. E. De Garmo,	Lyons,	Ionia.
H. P. Sly,	Plymouth,	Wayne.
James Bayley,	Big Beaver,	Oakland.
Charles E. Kitton,	St. Clair,	St. Clair.

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STATE AGRICULTURAL REPORT, 1858.

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THE STATE LAWS

RELATIVE TO

THE ENCOURAGEMENT OF AGRICULTURE.

[From the Compiled Laws of the State, page 536.]

AN ACT to incorporate the Michigan State Agricultural Society, approved March 31, 1849.

SECTION 1. *Be it enacted by the Senate and House of Representatives of the State of Michigan,* That all persons who now are, or may hereafter become associated for the purposes of this Act, are hereby constituted a body corporate, by the name of "The Michigan State Agricultural Society," for the purpose of promoting the improvement of Agriculture and its kindred arts.

Sec. 2. For the purposes aforesaid, the Society shall possess the general powers and privileges, and be subject to the general liabilities contained in chapter fifty-five, title ten, of the Revised Statutes of eighteen hundred and forty-six, so far as the same may be applicable and have not been modified or repealed; but the real or personal estates which the said Society shall be authorized to take, hold and convey, over and above its library, and its scientific and agricultural collections, shall not, at any time, exceed in amount the value of twenty thousand dollars.

Sec. 3. It shall be the duty of the Michigan State Agricultural Society to transmit to the President of the Senate, for the use of the Legislature, in the month of January, *annually*, a report and statement of its proceedings, specifying the nature of the encouragement proposed by it, and

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the object for which, and persons to whom, premiums have been awarded; embracing also such accurate details of the modes of cultivation, of keeping stock, and of other important incidents, as will acquaint farmers and others with the precise manner in which the valuable results recorded can be again obtained; and presenting such other matter as the Society may judge most useful in promoting a greater and more general progress in practical agriculture.

Sec. 4. This act shall take effect immediately.

AN ACT in aid of the Michigan State Agricultural Society, approved April 7, 1851.

Section 2. It shall be the duty of such officers of the Michigan State Agricultural Society, as it may elect for that purpose, annually to regulate and award premiums on such articles, productions and improvements, as they may deem best calculated to promote the agricultural and household manufactory interests of the State, having special reference to the most economical or profitable mode of competition in raising the crop or stock, or in the fabrication of the article offered: *Provided always*, That before any premium shall be delivered, the person claiming the same, or to whom the same shall be awarded, shall deliver to the President of the Society, in writing, an accurate statement and description, verified in such manner as the officers aforesaid may direct, of the character of the soil, and the process of preparing it, including the quality of manure applied in raising the crop, or the kind and quantity of feed in feeding the animal, as the case may be; also the kind and cost of labor employed, and the total expense and total product of the crop, or the increase in value of the animal, with a view of showing accurately the resulting profit.

Sec. 3. This act shall take effect immediately.

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AN ACT to provide for Publishing the Annual Report of the Michigan State Agricultural Society, approved April 7, 1851.

Section 3. The Michigan State Agricultural Society shall transmit to the Secretary of State the Annual Report of said Society for the year eighteen hundred and fifty-one, and every second year thereafter, embracing the same kind of information as is required in the third section of an act entitled, "An Act to incorporate the Michigan State Agricultural Society," approved March 31, 1849, any law to the contrary notwithstanding.

AN ACT making an appropriation to aid the Michigan State Agricultural Society, and to provide for publishing the Annual Reports of said Society, approved February 14, 1853.

Section 2. That two thousand copies of the Annual Report of the Michigan State Agricultural Society be printed and bound annually, under the supervision of the Secretary of State, in the same manner and form as the Report of the Superintendent of Public Instruction for the year 1852; and when so completed, the Secretary of State shall reserve thirty copies for the use of the State Library, and shall deposit with the Auditor General one copy for each organized township in this State, to be sent by him to each township for the use of the library thereof; and the remaining copies shall be forwarded by the Secretary of State to the Secretary of the Michigan State Agricultural Society, for the use of said Society, under the control of the Executive Committee.

JOINT RESOLUTION relative to furnishing certain laws, journals and documents to the Michigan State Agricultural Society, for the use of a Library, approved April 1, 1850.

Resolved by the Senate and House of Representatives of the State of Michigan, That the following laws and docu-

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ments be and they are hereby donated to the Michigan State Agricultural Society, (if it can be done without reprint, or injury to the State Library,) to aid said Society in establishing an Agricultural Library, at such place and under such regulations as the Executive Committee thereof may prescribe, viz: One copy of the Revised Statutes of 1838 and 1846, one copy of the Session Laws, one copy of the joint documents and journals of the Senate and House of Representatives of each Legislature since, and including the year 1839, and also one copy of the Session Laws and documents of the present Legislature, and of each successive Legislature; and the Secretary of State is hereby authorized and required to transmit to the Recording Secretary of said Society the above named laws and documents as soon as practicable, who shall receive the same and place them in the Library aforesaid.

This joint resolution shall take effect and be in force from and after its passage.

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LEGISLATIVE ENACTMENTS

RELATIVE TO

COUNTY AND TOWN AGRICULTURAL SOCIETIES.

AN ACT for the encouragement of Agriculture, Manufactures and the Mechanic Arts, approved March 16, 1849.

Section 1. In any county in this State, where the inhabitants thereof have organized and established, or may hereafter organize and establish, a Society for the encouragement and advancement of Agriculture, Manufacture, and the Mechanic Arts, and shall raise from said Society, annually, the sum of one hundred dollars or over, for the promotion of the above objects, in said county, which fact shall be certified by the President and Secretary of said Society, under oath, and a certificate thereof shall be filed with the clerk of the Board of Supervisors, the Board of Supervisors of said county, at their annual session in each and every year, are hereby required to levy a tax of not less than one-fortieth, nor more than one-tenth of one mill on the dollar, on the assessment roll of the county, which tax shall be collected and paid to the Treasurer of the county, in the same manner that other taxes are collected and paid.

Sec. 2. The Treasurer of the county shall keep the sum so raised, subject to the order of the Board of Supervisors of said county.

Sec. 3. The said Board of Supervisors shall draw upon the said Treasurer for the sum so raised; and the same shall be expended, under the direction of said Board, for

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the benefit of said Society, in the purchase of premiums, the diffusion of valuable agricultural, manufacturing and mechanical knowledge, or in such other way as shall, in the opinion of the Board, be calculated to promote and encourage the important objects above specified.

Sec. 4. The act entitled, "An act for the encouragement of Agriculture," approved March 2, 1844, is hereby repealed.

Sec. 5. Any citizen of any county in which a Society of the kind above named is or shall be organized, shall have a right to become a member thereof by complying with the rules and regulations of said Society.

Sec. 6. This act shall take effect and be in force from and after its passage.

AN ACT to authorize the formation of County and Town Agricultural Societies, approved February 12, 1855.

Section 1. *The People of the State of Michigan enact*, That any ten or more persons, inhabitants of this State, who shall desire to form a Town or County Agricultural or Horticultural Society, in any county, town, city or village of this State, may make, sign and acknowledge duplicate articles of association, before any officer authorized to take the acknowledgment of deeds in this State, and file the same in the office of the Secretary of the State Society, and also in the office of the County Clerk of the county in which the business of the Society is to be conducted; in which articles shall be stated the name by which such Society shall be known in law, the particular business and object of such Society, the number of Trustees, Directors and Managers, who shall manage the same, and the names of such Directors, Trustees or Managers thereof, for the first year of its existence.

Sec. 2. Upon filing such articles of association as aforesaid, the persons who shall have signed the same, and their

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associates and successors, shall thereupon, and by virtue of this act, become a body politic and corporate, by the name stated in such articles: *Provided*, No two Societies shall assume the same name; and by that name they and their successors shall and may have succession, and shall be persons in law, capable of suing and being sued; and they and their successors may have and use a common seal, and the same may alter and change at pleasure; and they and their successors, by their corporate name, shall in law be capable of taking and receiving, purchasing and holding, real estate for the purpose of their incorporation, but for no other purpose, to an amount not exceeding the sum of twenty-five thousand dollars in value, if a County Society, and ten thousand dollars if a Town, Village, or City Society, and of personal estate for a like purpose, to an amount not exceeding ten thousand dollars, if a County Society, and five thousand dollars if a Town, Village, or City Society; and may make all necessary by-laws for the management of said Society, not inconsistent with the laws of this State, or of the United States.

Sec. 3. Any person who shall pay into the Treasury of said Society annually, in such time and manner as the by-laws thereof shall direct, a sum of money not less than fifty cents nor more than one dollar, and subscribe to the articles of association, shall be a stockholder therein, and entitled to all the privileges and immunities thereof.

Sec. 4. The officers of said Society shall consist of a President, a Secretary and Treasurer, and at least five Directors, and they shall be elected annually by the stockholders of said Society; and said officers shall constitute a Board for the management of the concerns of said Society, a majority whereof shall constitute a quorum; and it shall be the duty of said officers to manage the property and concerns of said Society as will best promote the interests of Agriculture, Horticulture and the Mechanic Arts; and they may hold fairs and exhibitions, and may distribute

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premiums for the best and most meritorious animals or articles exhibited in these several departments, as shall be by their by-laws and regulations provided.

Sec. 5. There shall be but one County Society in any one county in this State, nor shall there be more than one Town Society in any one town, village, or city, but two or more towns may join and organize a Town Society for such towns.

Sec. 6. The said Society may, in case the uses and conveniences thereof so require, upon application to the Circuit Court of the county where such Society is organized and located, obtain and have authority to sell, from time to time, the whole or any part of its real estate, the granting of such authority to be in the discretion of the Court, and such application to be made only when authorized by said Society, at an annual meeting thereof, by a vote of not less than two-thirds of the members of such Society, present at such meeting; and notice of the intention to vote for such application having been published in some newspaper published in said county, if there be one published; and if not, then in some newspaper published in an adjoining county, once a week for three months preceding such annual meeting.

Sec. 7. The stockholders of all corporations organized under this act shall be individually liable for all labor performed for such corporation or association.

Sec. 8. The President, Secretary and Treasurer of said Society shall, on or before the twentieth day of December in each year, make out and transmit to the Secretary of the State Agricultural Society, at his office, a statement of the transactions of said Society for the preceding year, and giving a full detail of the receipts and expenditures thereof, with a list of the premiums awarded, and to whom, and for what purpose.

Sec. 9. This act shall be subject to the provisions of chapter fifty-five, title ten, of the Revised Statutes of

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eighteen hundred and forty-six, so far as applicable to associations formed under this act.

Sec. 10. This act shall take effect immediately.

AN ACT to make an appropriation to aid the Michigan State Agricultural Society.

SECTION 1. *The People of the State of Michigan enact,* That there be, and is hereby appropriated out of the Treasury of this State, the sum of two thousand five hundred dollars each year, for the years eighteen hundred and fifty-nine and eighteen hundred and sixty, to the Michigan State Agricultural Society, for the payment of premiums, to be paid by the State Treasurer to the Treasurer of said Society, on the warrant of the Auditor General: *Provided,* That the Treasurer of said Society shall, on or before the fifteenth day of October, in each year, make, subscribe and deposit with the Auditor General his affidavit that said Society has raised, for the year, a like sum of two thousand five hundred dollars, by voluntary subscription and fees of membership.

Sec. 2. This act shall take effect immediately.

Approved February 14, 1859.

AN ACT relative to Highways in the State of Michigan.

[No. 13 of the Laws passed at the Session of 1858.]

SECTION 1. *The People of the State of Michigan enact,* That an act entitled an act to repeal chapter (25) twenty-five of the revised statutes of (1846) eighteen hundred and forty-six; also, act (88) eighty-eight, entitled an act to amend chapter (25) twenty-five of the revised statutes of (1846) eighteen hundred and forty-six, relative to laying out, altering and discontinuing highways, approved March (18) eighteenth, (1848) eighteen hundred and forty-eight;

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also, act No. (72) seventy-two, entitled an act to amend chapter (25) twenty-five of the revised statutes of (1846) eighteen hundred and forty-six, approved March (15) fifteenth, (1848) eighteen hundred and forty-eight, and to provide for altering, laying out and discontinuing highways, approved February (17) seventeenth, (1857,) eighteen hundred and fifty-seven, be so amended as to read as follows:

"That whenever any (10) ten or more freeholders of any township shall wish to have a highway in any part of such township, not included within the corporate limits of any city or village, altered, laid out or discontinued, they may, by writing under their hands, make application to the commissioners of highways of the township for that purpose, who shall proceed to alter, lay out, or may discontinue such highway, as hereinafter directed: *Provided*, That no second application shall be made within twelve (12) months for the same purpose: *Provided*, That whenever the person or persons through whose land the proposed highway is to be altered or laid out, shall give his, her or their consent, in writing, according to the provisions of section (17) seventeen of this act, and release any claim for damages, the commissioners of highways shall have power to alter or lay out the proposed highway, without the intervention of a jury or commissioners appointed by a court of record, as hereinafter provided, and shall certify their action to the township clerk.

Sec. 2. Whenever the commissioners of highways shall be applied to as mentioned in the preceding section, to alter or lay out any highway, they, or one of them, shall, within five (5) days thereafter, make application to a justice of the peace of the same or adjoining township, for the appointment of a jury of twelve (12) freeholders of the county, to ascertain the necessity of taking the property described in such application, and to appraise the damage thereon, which application shall be in writing, and

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describe the premises through which it is proposed to alter or lay out such highway.

Sec. 3. Upon the receipt of such application, the justice shall appoint a time and place for that purpose, and shall issue a citation or notice stating the object, time and place of such meeting, which shall be served by the highway commissioners on the owner or occupants of lands through which it is proposed to alter or lay out such road, at least (10) ten days before such time; and in case any such land is unoccupied, the notice may be served by posting up the same in three public places in the township, (10) ten days before the time of meeting.

Sec. 4. If the commissioners, or any one of them, and the owners or occupants of such lands, or such as may be present, cannot agree upon any other mode of appointing such jurors, they shall be appointed in the following manner:

The justice may make a list of twenty-four disinterested freeholders residing in the county, and each party may object to six on the list, and if either party fail to appear, or refuse to act, the justice and the other party, or the justice alone, may strike out the names of twelve, and the remaining twelve (12) shall be the jurors selected, and the justice may continue the hearing of the application for not less than six, nor more than (12) twelve days.

Sec. 5. The justice shall then annex to the application a warrant under his hand, returnable on said adjourned day, and issue the same, directed to any constable of the county, commanding him to summon the said jurors to be and appear at the place appointed on the said adjourned day, to serve as jurors, to ascertain the necessity of taking certain property for highway purposes, and to appraise the damages thereon; and if all the jurors shall not appear the justice shall cause a sufficient number of talismen to be summoned to make a full jury. And if said jury shall fail to agree and return a verdict to the parties [justice] with-

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in the time provided by this act, they shall be, by such justice, discharged, and a new jury empannelled within (12) twelve days, upon the same application and in the same manner and form as herein provided for empanneling a jury.

Sec. 6. The jurors shall be sworn by such justice, to ascertain the necessity of taking the property described in the application, and justly and impartially to appraise the damage thereon, if any is claimed. They shall then proceed to view the premises described, and shall, within (5) five days thereafter, make return to the said justice in writing, to be signed by them of their doings, which shall state, if such road be altered or laid out, the necessity of taking the property described in such application, the amount of damages appraised, if any, to whom payable if known, and a statement of the time spent by them for that purpose, which return shall be certified by such justice, and filed in the office of the township clerk.

Sec. 7. Such jurors shall be entitled to receive ($1) one dollar per day, and (50) fifty cents for each half day, and the justice and constable each ($1) one dollar for their fees; and the damages which shall be assessed as hereinbefore provided, upon altering or laying out any highway, and all the lawful charges against the township for services, fees and expenses consequent upon altering or laying out such highway, shall be levied and collected in the township within which such highway is situated, and shall be paid upon the order of the township board, as other township charges, except as hereinafter provided.

Sec. 8. Whenever the commissioners of highways of one township shall disagree with the commissioners of an adjoining township, whether in the same or another county, in any matter relating to a highway on the line between the two townships, the commissioners of both townships, or a majority of them, shall meet at the request of the

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commissioners of either township, and make their determination upon such subject of disagreement.

Sec. 9. Whenever it shall become necessary to have a highway altered or laid out upon the line between two townships, application for that purpose may be made to the commissioners of either township, who shall proceed to lay out or alter such road in the manner provided by this act; but they shall cause the survey, or a copy thereof certified by them, to be filed in the office of the township clerk of each township. Upon proceeding to alter or lay out such road, application may be made to a justice of the peace of either township for the appointment of jurors, who may be drawn equally from the townships on the line between which said road runs. The said jurors shall appraise the amount of damage to be paid by each township, and the return of their doings shall be certified by the justice and filed in the office ot the township clerk of each township.

Sec. 10. The commissioners of highways of such adjoining townships, upon altering or laying out a highway upon the line thereof, shall determine what part of such highway shall be made and repaired by each township, and each township shall have all the rights and be subject to all the liabilities in relation to the part of such highways to be made and repaired by such township as if the same was located wholly in such township.

Sec. 11. Public roads to be laid out according to the provisions of this act, shall not be less than (4) four rods wide, except in cities or villages, where the commissioners or other proper authorities may otherwise determine.

Sec. 12. Whenever commissioners of highways are applied to, as provided in section (1) one of this act, to discontinue a road, they shall give at least (10) ten days notice, in writing, to the owners or occupants of lands through which said road runs, of the time when and place where they will meet for that purpose; and in case such land or

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any part is unoccupied, such notice may be given by posting up the same in (3) three public places in the township. In case the commissioners shall deem it advisable to discontinue such road, they shall make and sign an order to that effect, and cause the same to be filed in the office of the township clerk, from and after the time of filing which, such road shall cease to be a public highway, unless an appeal shall be taken from the determination of said commissioners, as hereinafter provided.

Sec. 13. The commissioners of highways, or (1) one of them, may, instead of making application for the appointment as [of] jurors, as provided in section (2) two, of this act, make application to any court of record, for the appointment of (3) three commissioners, whose duty it shall be to ascertain the necessity of taking the property described in such application, and to appraise the damage thereon, if any is claimed. The application shall be in writing, and describe the premises proposed to be taken for such highway purposes, and notice thereof shall be given, at least (5) five days previous to making such application, to the owners or occupants of lands described in the application, and such notice may be served by the highway commissioners, in the same manner as provided in section three (3) of this act, and such court shall be entitled to receive for his services on each application for the appointment of commissioners, as provided in this act, the sum of ($1) one dollar.

Sec. 14. The commissioners so appointed shall be sworn by one of the commissioners of highways, to ascertain the necessity of taking the property described in the application, and justly and impartially to appraise the damage thereon, if any is claimed. They shall then proceed to view the premises, and shall, within (5) five days thereafter, make return of their doings in writing, signed by them, to the township clerk, which return shall state if such road is altered or laid out, the necessity of taking the property

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described in such application, the amount of damage appraised thereon, to whom payable, if known, and shall be filed in the office of the township clerk. The said commissioners shall be entitled to the same compensation as jurors are, under the provisions of this act. The damages appraised by said commissioners, together with all the costs of the proceeding, shall be levied, collected and paid in the manner prescribed in this act.

Sec. 15. If any discontinued highway shall be attached to a tract of land through which a new highway shall be laid out, the same may be taken into consideration, in estimating the damages sustained by the owners, and in estimating the damages which may be sustained by any person owning or interested in said lands, by reason of laying out or altering any highway, the benefit which such persons shall receive thereby, shall be taken into consideration.

Sec. 16. All highways heretofore regularly laid out and established in pursuance of existing laws, or statutes heretofore passed by the Legislature, and approved by the Governor, are hereby declared to be legal highways, and it shall be the duty of the township clerk to record, in a book to be kept by him for that purpose, all papers filed in his office, relating to the laying out, altering or discontinuing of roads, as provided in this act.

Sec. 17. Whenever the owner or owners of lands shall give the same or any part thereof, to the township for highway purposes, such owner or owners shall make a statement in writing, signed by him or them, to that effect, and cause the same to be filed in the office of the township clerk, of the township in which such lands are situated, and if a road shall be opened and worked thereon within the time limited by the (25) twenty-fifth section of this act, for opening and working highways, the person or persons signing such statement, or any one claiming under him or them, shall be precluded from having any action to recover possession of such land, or any compensation there-

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for, so long as the same shall be used for such highway purposes.

Sec. 18. Any person who shall conceive himself aggrieved by any determination of the commissioners of highways of any township, in discontining or refusing to discontinue any road, may, within (10) ten days after such determination, appeal to the township board of such township, but an appeal by one person shall not conclude nor affect the rights of any other person, who shall appeal within the time limited; and the said township board shall suspend all proceedings upon appeals received by them, from any such determination, until the time limited for such appeals shall have expired, to the end that their decision, when made, may embrace the whole subject.

Sec. 19. In case of an appeal from a determination of the commissioners of highways of adjoining townships in the same county, or in different counties, relating to a road upon the line of such township, such appeal may be made to the township boards of the said adjoining townships, who shall act jointly in deciding upon the determinations of the said commissioners: *Provided*, That any commissioner who may be a member of the township board shall not act on such appeal.

Sec. 20. Every appeal from a determination of commissioners of highways shall be in writing, addressed to the township board or boards, as the case may be, and signed by the party appealing, and shall briefly state the grounds upon which it is made, and whether it is brought to reverse entirely the determination of the commissioners, or only to reverse a part thereof, and in the latter case it shall specify what part.

Sec. 21. It shall be the duty of the township boards, to whom the appeal is made, as soon as may be after the time limited for taking such appeals shall have expired, to give notice to the appellant, and to one or more of the commissioners from whose determination such appeal was

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taken, of the time when they will proceed to view the premises and hear the appeal.

Sec. 22. Every such notice shall be in writing and served at least (4) four days before the time mentioned therein, by delivering a copy of the same to the appellant and to one of such commissioners, or by leaving a copy thereof at the dwelling house of such appellant and commissioner.

Sec. 23. The said township board or boards shall proceed at the time specified in the notice, to view the premises and to hear the proofs and allegations of the parties, and may adjourn from time to time as may be necessary, and their decision shall be conclusive in the premises, and every such decision shall be reduced to writing, be signed by the township board or boards making the same, and filed by them in the office of the clerk of the proper township, who shall file the same, and give notice thereof to the commissioner of highways, but nothing herein contained shall be construed to prevent a new application under the provisions of this act.

Sec. 24. Whenever a highway shall be altered or laid out, and the same does not run upon a section line, the commissioners of highways shall, if they shall deem the same necessary, cause an accurate survey to be made of the line of said road, and shall file the minutes of such survey in the office of the township clerk of the township in which such road is situated: *Provided*, That in all cases where the premises taken for a highway are required to be set out or described, the said premises or the said highway shall be construed to be the parcel of land not less than (2) two rods wide on each side of the line of survey, and shall be sufficiently set forth and described for all the purposes of this act by setting forth the line of survey.

Sec. 25. Whenever a public highway shall have been laid out and established, or altered through any enclosed or improved land, and the ascertained damages for such

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highway shall have been paid or tendered to the owner or occupant, or an order on the treasurer of the proper township for the amount of such damages, shall have been executed and delivered, or tendered to such owner or occupant by said commissioners, said commissioners of highways shall then give the owner or occupant of the land through which said road shall have been laid out or altered, notice thereof, and require him to remove his fence or fences, within such time as they shall deem reasonable, not less than (60) sixty days after giving such notice, and in case such owner or occupant shall neglect or refuse to remove his fence or fences, within the time specified in such notice, the said commissioners shall have full power and authority, and it shall be their duty to enter with such aid and assistance as shall be necessary, upon the premises and remove such fence or fences, and open such highway without delay, after the time specified in such notice shall have expired: *Provided*, No person shall be required to remove his fence or fences between the (1st) first day of April and the (1st) first day of November.

Sec. 26. Every public highway already laid out, no part of which shall have been opened and worked within (4) four years from the time of its being so laid out, and every such highway hereafter to be laid out, no part of which shall be opened and worked within the like period, shall cease to be a road for any purpose whatever.

Sec. 27. All public highways now in use, heretofore laid out and allowed by any law of this State, or of the late Territory of Michigan, of which a record shall have been made in the office of the clerk of the county or township, and all roads not recorded, which have been used (10) ten years or more, and all roads which shall be hereafter laid out and not recorded, and which shall be used (10) years or more, shall be deemed public highways, but may be altered or discontinued according to the provisions of this act.

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Sec. 28. In cities and villages, applications may be made by (10) ten freeholders, as provided in section (1) one of this act, to the corporate authorities of such city or village, as [and] the corporate authorities of such city or village shall have power, upon such application, to lay out and establish, open, alter or discontinue such streets, commons, lanes, alleys, sidewalks, highways, water-courses and bridges, as may be necessary for the public convenience.

Sec. 29. In case the corporate authorities of any city or village, should require the lands of any person for such purposes, such corporate authorities may cause notice to be given to the owner or party interested, his, her, or their agent or attorney, either by personal service, or by written or printed notice, posted up in at least (3) three public places in said city or village, (3) three weeks next preceding the meeting of the corporate authorities for the purpose aforesaid, and the said corporate authorities of such city or village, are hereby authorized to contract for and purchase such lands for the purposes aforesaid.

Sec. 30. In case the owner or owners of such lands, shall refuse to sell the same for the purpose aforesaid, or if the parties fail to agree, it shall and may be lawful for the corporate authorities of such city or village, to cause the clerk or recorder of the same, to issue a *venire facias*, directed to the marshal or other proper officer of such city or village, directing him to summon and return a jury of (12) twelve freeholders to appear before such clerk or recorder, at a time to be therein stated, to inquire into the necessity of taking said lands or premises, and the just compensation therefor to the owners of, or to those interested in said lands and premises, which jury shall be duly sworn by such clerk or recorder, faithfully and impartially to inquire into the necessity of taking such lands or premises, and the just compensation to be made therefor.

Sec. 31. The said jury shall then proceed to view the lands and premises proposed to be taken for such public

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use, and if they shall deem it necessary for such city or village to take such lands or premises for the public use, shall inquire and assess such damage and recompense as they think proper to award to the owner or owners of such lands and premises, according to their respective estates and interests therein, and the said clerk or recorder shall, upon the return of such assessment or verdict, report the same to the corporate authorities of such city or village, at their next meeting, and the said corporate authorities may thereupon enter an order confirming the same, or may refuse to confirm the same, and order another jury to be summoned in the manner aforesaid; and such second jury when summoned and sworn as aforesaid, shall proceed to inquire into the necessity of taking such lands and premises for the public use, and assess such damages as aforesaid.

Sec. 32. If one or more of such jurors shall fail to attend at the time and place mentioned in the *venire facias*, the justice, clerk or recorder before whom such jury were summoned to appear, shall order the constable, marshal or person summoning such jury, forthwith to summon a sufficient number of talismen to make up said jury.

Sec. 33. The damage or compensation so assessed by said jury, together with the costs and expenses of such procedings, shall be assessed, levied and collected upon the property of such city or village in the same manner as other taxes or moneys are levied; such damage and recompense shall be paid or tendered to the claimant or person entitled thereto, before such street, common, lane, alley or highway shall be opened, established or altered; when the damage aforesaid shall have been paid or tendered to the person or persons entitled thereto, it shall be lawful for the corporate authorities of such city or village, to cause the said lands and premises to be used and occupied for the purposes aforesaid.

Sec. 34. The clerk or recorder aforesaid may, instead of

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procuring the summoning of a jury, as hereinbefore provided, make an application to a court of record for the appointment of (3) three commissioners, whose duty it shall be to ascertain and determine the necessity of taking the property described in such application, and to appraise the damage thereon, if any is claimed; such application shall be in writing, and describe the premises proposed to be taken for such purpose, and notice thereof shall be given at least (5) five days previous to the time of making such application, to what court such application will be made, and the time of making the same, to the owner or occupant of the lands described in the application, his, her or their agent or attorney, and such notice may be given by the commissioner of highways, clerk or recorder, as the case may be, in the manner provided in section (4) four of this act.

Sec. 35. The commissioners so appointed, shall, before they proceed to the performance of their duties prescribed in the preceding section, be sworn to ascertain and determine the necessity for taking the property described in the application, and justly and impartially to appraise the damage thereon, if any is claimed; such commissioners shall then proceed to view the premises proposed to be taken for such public use, and shall within (5) five days thereafter, make return of their doings in writing, signed by them, to the township, city or village clerk or recorder, which return shall state if such highway, street, common, lane or alley is laid out or altered, the necessity therefor, the amount of damage appraised and to whom payable, if known, and shall be filed in the office of the township, city or village clerk or recorder. The commissioners so appointed shall be entitled to receive the same compensation as jurors are entitled to under the provisions of this act.

Sec. 36. Jurors who have been regularly summoned under the provisions of this act, who shall, without good cause shown therefor, neglect or refuse to appear and act

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in pursuance to said summons, shall forfeit the sum of (5) five dollars, to be recovered by action as other forfeitures to townships.

Sec. 37. The commissioners of highways of the several townships may cause a statement to be presented at the annual township meetings, of the improvements necessary to be made in the roads and bridges in such townships for the ensuing year, and an estimate of the probable expense thereof, beyond what the labor to be assessed for that year will accomplish; and such meeting may vote for the raising of a sum not exceeding (½) one-half of (1) one per cent. upon the aggregate valuation of the property in the township according to the assessment roll of the preceding year, and the sum so voted shall be levied and collected in the same manner as other township expenses.

Sec. 38. Chapter (25) twenty-five of the revised statutes of (1846) eighteen hundred and forty-six, also act (88) eighty-eight, entitled an act to amend chapter (25) twenty-five of the revised statutes of (1846) eighteen hundred and forty-six, relative to laying out, altering and discontinuing highways, approved March (18) eighteenth, (1848) eighteen hundred and forty-eight; also, act (72) seventy-two, entitled an act to repeal [amend] chapter (25) twenty-five of the revised statutes of (1846) eighteen hundred and forty-six, approved March (15) fifteenth, (1848) eighteen hundred and forty-eight, be and the same are hereby repealed, and all acts and parts of acts inconsistent with the provisions of this act, except acts of incorporation of cities and villages, are hereby repealed.

This act is ordered to take immediate effect.

Approved February 3, 1858.

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AN ACT authorizing the commissioners of highways of townships to establish water-courses, and locate ditches in certain cases.

[No. 257 of the Laws passed at the session of 1859.]

SECTION 1. *The People of the State of Michigan enact,* That if the persons interested in any water-course, or in draining their lands by a ditch, shall agree as to the establishment of such water-course, or location of such ditch, and the apportionment of the labor, cost and expenses, that each person or tract of land interested in or benefitted by such water-course or ditch shall bear in opening and maintaining the same, they shall make a map thereof, showing the commencement and termination of such water-course or ditch, by courses and distances from the nearest section corner, or quarter post, or other permanent monument, and the intermediate courses and distances, the width and depth thereof, and divide the same into as many sections, numbering them, as there shall be persons or tracts of land contributing to the construction and maintenance of the same, in accordance with the apportionment of labor to each person or tract of land, and shall attach thereto a certificate describing such water-course or ditch, its commencement, courses, distances, termination, width, depth, number of sections, and length of each section, giving the name of each person, and description of each tract of land, benefitted by such water-course or ditch, and designating the section, by number, that each person or tract of land shall open and maintain, and shall sign such certificate, and file the same with the clerk of the township or townships in which such water-course or ditch shall be located, and said clerk shall file and keep the same in his office with the town records, in the same manner that records of highways are now required by law to be filed and kept; and said persons shall, before filing said map and certificate, as aforesaid, cause a measurement to be made of each section on the ground, a stake or boun-

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dary, numbered as aforesaid, to be placed at the end of each section, for the benefit of each person interested, which ditch or water-course, located and apportioned by agreement, as aforesaid, and duly filed, as aforesaid, shall have all the force and effect, and be as binding in law as if located and established by the commissioners of highways under the provisions of this act.

Sec. 2. If such persons shall agree as to the location and dimensions of such water-course or ditch, but shall be unable to agree upon the apportionment of the labor, costs and expenses of opening and maintaining the same, they may make a map and certificate, as provided in the first section of this act, omitting therein the division into sections, and the apportionment of labor, costs and expenses in opening and maintaining the same, sign the same, and deliver it to the highway commissioners of the township or townships in which the water-course or ditch is located, and such commissioners shall at once proceed to measure said water-course or ditch, and apportion the labor, costs and expenses thereof, among the persons signing said certificate and the land benefitted in its proportion, in the same manner and with like effect as provided in this act in cases of locating and establishing without the agreement of parties, and shall file their certificate of apportionment, together with said maps and certificate of agreement, with the clerk of the township or townships wherein located, who shall file and return the same, as in other cases in this act, which water-course or ditch, when so located, established and apportioned, partly by agreement and partly by commissioners, shall have the same force and effect as if done entirely by agreement or by commissioners, as provided by this act.

Sec. 3. That the commissioners of highways shall have power, upon application of any party interested, to enter upon any lands in their townships, to view any water-course or proposed ditch, for the purpose of draining such swamps,

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marshes, and other low lands, and lands owned and held by one or more persons as do, in their judgment, affect injuriously the health of the inhabitants; and in case the parties interested in such lands cannot agree where such water-course or ditch shall be located and opened, or as to the apportionment of the labor, costs and expenses that each person interested, or tract of land drained or benefitted by said water-course or ditch, shall bear, said commissioners shall cause such water-course or ditch to be located and surveyed, if necessary, and shall set apart to each person, or tract of land drained or benefitted by the same, such portion thereof, to be opened and maintained by such person, or tract of land as the said commissioners shall deem just and right, according to the benefits to be derived by him or advantage to such tract of land drained and benefitted by opening such water-course or ditch.

Sec. 4. That when any person shall make application to said commissioners as prescribed in the third section of this act, said commissioners shall at once appoint a time and place for making such examination and hearing, and such persons shall give notice in writing to all persons interested in the proposed ditch or water-course, if known to such person, of such application and the time when, and place where, said commissioners will meet to make such examination, which notice shall be served personally upon said parties, or by copy left at the residence of such party, at least three days before the day appointed by said commissioners as aforesaid; and a copy of such notice, together with the affidavit of service thereof, and the publication of notice as herein provided shall be taken as evidence that the same has been regularly served and published; and if any parties reside without the State, or county, or township, it shall be lawful to give such notice by publication thereof for two successive weeks before such time appointed, as aforesaid, in some newspaper of general circulation in the county, and said commissioners shall have

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power to administer oaths as to verification of services and publication of notice, and in all other cases necessary in enforcing the provisions of this act.

Sec. 5. On such examination, if said commissioners shall determine to locate such ditch, or establish such water-course, they shall make a survey of the proposed route, if necessary, and shall make a map or diagram thereof, showing its commencement, courses, distances, termination and dimensions, and divide the same into as many sections, numbered, as there are tracts of land to be drained or benefitted by such water-course or ditch; and shall attach thereto their official certificate showing the commencement and termination of the same, from the nearest section corner or quarter post, or other permanent boundary, and the intermediate courses and distances and dimensions thereof; and in case the owners of land through which the same is located, shall not release all claim for damages on account of locating and opening the same, the said commissioners shall make a list of twenty-four disinterested freeholders of said county, residing in the vicinity of such property, from which said commissioners shall strike off the names of six, and the person claiming damage, six; and if no such persons appear, or appearing, refuse or neglect to act, then said commissioners shall strike off other six, and the remaining twelve shall be the jurors elected; and said commissioners shall at once issue a venire, signed by them, directed to the sheriff or any constable of said county, commanding him to summons said jurors, naming them, to be and appear before him forthwith, and at such other time as they shall direct, not more than three days from the date of said venire, to serve as jurors to ascertain the necessity of taking certain property for the purpose of such ditch or water-course, and to appraise the damage thereon; and if all said jurors shall not appear, the said sheriff or constable shall summons talesmen to make a full jury. The said jurors shall be sworn by

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said commissioners, or one of them, to ascertain the necessity of locating and opening such ditch or water-course described in said certificate, and to appraise the just compensation thereof, and damages thereon, if any. The said jury shall take said map and certificate of said commissioners, and after viewing the premises described therein, they shall make return to said commissioner in writing, signed by them, of their doings, which shall state the necessity of such water-course or ditch, and the amount of compensation or damage appraised, if any, to all persons injuriously affected or damaged by said ditch or water-course, and to whom payable, which venire and return of said jury shall be filed in the office of the clerk of said township or townships, and in case said jury cannot agree another may be chosen and sworn in like manner, on the same or some other day, to be appointed by said commissioners, who shall act and make return as aforesaid, and successive jurors may be chosen, sworn and act as aforesaid, until they shall agree, if the parties interested desire it, or said commissioners may then or in the first instance, apply to the probate court of their county for the appointment of the [three] commissioners to act in place of said jury, who shall take same oath of said jurors, and shall perform the same duties prescribed above for said jury, and the certificate of their appointment by said probate court with their return shall be filed in the town clerk's office in same manner as return of the jury: *Provided*, That if said jury or commissioners shall certify that said water-course or ditch is not necessary, all further action in that case shall be suspended for six months; at the expiration of which time another jury or set of commissioners may be called or appointed as aforesaid, if the parties interested desire it, and in case such jury or commissioners agree and make return as aforesaid, the commissioners of highways shall proceed as aforesaid.

Sec. 6. If the said jury or said commissioners of ap-

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praisal so appointed, shall return that said water-course or ditch is necessary, and shall award the compensation or damage as aforesaid, the said commissioners of highways shall, as soon thereafter as may be, proceed to apportion the labor, costs and expenses of opening and maintaining said ditch or water-course, among the several persons interested therein, and upon the lands drained and benefitted thereby, in such amount and proportion as they shall deem just and right, and shall cause a measurement to be made of such portion thereof, as they shall award to each person or tract of land, and cause a stake or monument to be placed at each boundary line, and number the same, to correspond with the said numbers on said map and certificate for the benefit of those interested, and shall officially certify the number of each section they so award to each person or tract of land; which certificate, together with said map and certificate of location and dimensions, and other papers in the case, shall be filed in the office of the clerk of the township in which the same is located, to be there preserved as the record of such townships for the benefit of those interested; and such award and apportionment of labor as aforesaid, by said commissioners of highways when duly filed as aforesaid, shall thenceforth be an obligation against such owner of lands benefitted and assessed, and a lien upon such tract of land to open and always maintain such portion of such ditch or water-course in accordance with the order of the commissioners of highways of such townships.

Sec. 7. Said commissioners of highways, after having made said apportionment and filed the certificate thereof, shall, within a reasonable time, cause a written notice to be served upon the persons owning or interested in the land drained and benefitted as apportioned, if known to said commissioners, setting forth the section or sections of said ditch or water-course he is bound to open and maintain by his agreement or by said apportionment, and shall

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order him to open said ditch or water-course of the width and depth described in said map and certificate so filed by agreement or by said commissioners, within such reasonable time as they shall, in said order, specify, and that he may keep open and sustained without obstruction, his said portion thereof, of the width and depth designated in said map and certificate, and in all cases of non-residence of such persons, such order and notice may be posted in three public places nearest to the said land so owned and assessed for draining as aforesaid, and the certificate of the commissioners, or affidavit of other persons, as to such service and posting, filed in said clerk's office, shall be deemed conclusive evidence of the regular service and posting of said notice and order.

Sec. 8. If any person interested in said water-course or proposed ditch, and assessed, as aforesaid, for opening the same, shall fail to procure the cutting of said ditch, or opening of said water-course, through that section of the same so apportioned to him, and against his land, as aforesaid, by said commissioners, or by agreement, at the time and manner designated by said commissioners in such order and notice, said commissioners shall cause the same to be done, either by public or private contract, on such reasonable terms as they are able to procure, and give to such person having performed the labor aforesaid a certificate of the amount and value of the labor by him performed, or caused to be performed, with a description of the land against which such labor was apportioned; and the person holding such certificate shall be authorized, after demand and refusal to pay, to file the same with the supervisor of the township where the land is situated, who shall enter the same upon the tax roll of his township against the land described in said certificate benefitted by the cutting and opening of said ditch or water-course, in a column entitled "delinquent ditch tax," in the same manner that delinquent highway taxes are required by law to

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be entered, and the amount so entered, together with the legal interest thereon, shall be collected by the township treasurer, the same as other taxes, and when collected, shall be paid over to the person or persons entitled to receive the same: *Provided*, That if the person owning any land so benefitted, and assessed, and interested in said ditch or water-course, reside out of the State or county, shall fail to pay the township treasurer for the use of the person holding such certificate, for thirty days after the labor has been performed, the person holding the same may file it with the supervisor of the township where said land is situated, who shall levy the same upon the tax roll of his township, in the manner above stated, and the same shall be collected and paid over as provided in other cases in this section: *Provided further*, That no supervisor shall be obliged to levy the tax as aforesaid, unless said certificate contain a perfect description of the land subject to the amount so claimed.

Sec. 9. If the tax on the land so assessed on the tax roll for delinquent ditch tax shall not be collected by the treasurer of said town, the same shall be returned, advertised and sold, the same as lands are returned and sold for other taxes.

Sec. 10. In cases where any proposed ditch or water-course shall be in more than one township, application shall be made to the highway commissioners of each of said townships, and in such case a majority of the commissioners of such township shall be competent to create and establish the ditch or water-course: *Provided, always*, That no commissioner shall serve in any case wherein he is personally interested. Any two commissioners may form a quorum for the transaction of business, and should such township be without a quorum, it shall be lawful for the commissioners of any adjoining township to perform like duties with like powers, as residents of any such township

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Sec. 11. All persons to whom damages shall be awarded, as herein provided, for cutting any ditch, or opening water-course, or throwing up any embankment, or changing any water-course, shall be paid therefor by the persons interested, the amount of such award, on demand of said commissioners, within thirty days after damage shall have been ascertained, as in this act provided.

Sec. 12. The person interested in said ditch or water-course shall be responsible for the fees of the officers, juries, and commissioners under this act, and for the amount of damages awarded by the jury or commissioners for the opening of the proposed ditch or water-course, and shall be by them, or some of them, deposited with said commissioner of highways, before said commissioners shall order the same cut and opened; and in case such person or persons advance the whole of such sum, or an undue proportion thereof, he shall notify said commissioners of the amount he or they have advanced, and the same shall be credited to him in said apportionment of labor in opening said ditch.

Sec. 13. Highway commissioners and other persons refusing, failing or neglecting to perform any of the duties imposed by this act, shall forfeit and pay a fine of five dollars for every such neglect and refusal, to be recovered before any justice of the peace in his township, for the benefit of common schools in such township, at the suit of any person feeling aggrieved thereby.

Sec. 14. The commissioners of highways shall receive for service under this act, each one dollar per day, and half dollar for each half day for the time actually employed. The judge of probate the sum of fifty cents for making appointment of commissioners and certificate thereof. The sheriff and constable the same as in other cases of serving venire, and juries the same fees as in cases before justices of the peace.

Sec. 15. Whoever shall willfully obstruct any such ditch

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or water-course, or injure the same, shall forfeit for every such offense a sum not exceeding twenty-five dollars, to be recovered before a justice of the peace of such township, for the benefit of common schools in such township, at suit of any person making complaint, and shall also remove such obstruction, and in default thereof for three days, shall be liable to action therefor, before any justice of the peace of the town, at the suit of the commissioners of highways, to be expended by said commissioners in removing such obstructions, and the fees of commissioners in superintending the same, and attending to such suit.

Sec. 16. The power herein conferred upon highway commissioners, shall also extend to and include deepening, widening and cleaning out any ditches or drains that have been heretofore made or shall hereafter be constructed.

Approved February 15, 1859.

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CONSTITUTION

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY,

(As Amended October 1, 1858.)

Article 1. The name of this association shall be "The Michigan State Agricultural Society," and its object shall be to promote the improvement of agriculture and its kindred arts, throughout the State of Michigan.

Art. 2. The officers of this Society shall be a President, one Vice President in each organized county in the State, a Recording Secretary, and a Treasurer, and the Corresponding Secretary of each organized County Agricultural Society shall be the Corresponding Secretary of this Society for their county; and any county not having an organized County Agricultural Society, shall not be entitled to a Corresponding Secretary of the State Society; and an Executive Committee, consisting of the President and Recording Secretary, and fourteen other members to be chosen for that purpose, and also the ex-Presidents of the Society. These officers shall be elected by a majority of the votes at the annual meeting of the Society, and shall, except the fourteen members of the Executive Committee, hold their offices for one year, and until the annual meeting of the Executive Committee. There shall be nine members of the Executive Committee elected at the meeting of the Society in 1858, eight of which members shall be chosen to serve for two years from January 1, 1859, and one member for one year from the same date; and at the next annual meeting of the Society, and annually thereafter, seven members of the Executive Committee shall be

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elected to hold for two years, and until the annual meeting of the Executive Committee: *Provided*, That the officers named upon the organization of the Society shall be deemed members, and shall remain officers only until others shall be duly elected at the first annual meeting; and if a vavancy happened, it may be filled by appointment of the Executive Committee.

Art. 3. The duties of the President, Vice President, Recording and Corresponding Secretaries, shall be such as usually pertain to their respective offices, and such also as may be prescribed by the order of the Executive Committee, as hereafter provided.

Art. 4. The Treasurer shall receive and keep an accurate account of all moneys belonging to the Society; he shall pay out its moneys only on the order of the Executive Committee, and at each annual meeting of the Society, he shall make a full report of its financial transactions and conditions.

Art. 5. The Executive Committee shall determine the place for holding each annual meeting and fair of the Society, and it shall call that meeting and fair at such time as it shall judge best, or between the first Monday in September and the third Monday in October, giving at least sixty days public notice thereof.

Art. 6. The Executive Committee shall direct the money appropriations of the Society, and have the control of its property; it shall make the necessary preparations for the annual fair, and issue all proper public notices and circulars in relation thereto, or to the general object of the Society; it shall prepare the necessary By-Laws of the Society, and may prescribe such duties to the other officers of the Society as are not inconsistent with the usual business of their respective offices; it shall itself obey the instructions which may be given to it at the annual meeting of the Society, and at the expiration of its term of service, shall make a full report of its proceedings. It shall

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be competent for the Executive Committee, or a majority of them, to appoint a Chairman and Secretary, who may transact all such business as they may be authorized to do by said committee; and said Secretary shall sign, and said Chairman shall countersign, all orders on the Treasurer for the payment of any money directed by said committee to be paid for any purpose, and said Secretary shall keep an accurate account of all orders so drawn.

Art. 7. It shall be the duty of the Executive Committee annually to regulate and award premiums on such articles, productions and improvements as they may deem best calculated to promote the agricultural and household manufacturing interests of the State, having special reference to the most economical or popular mode of competition in raising the crops or stock, or in the fabrication of the articles offered: *Provided always*, That before any premium shall be delivered, the person claiming the same, or to whom the same shall be awarded, shall deliver to the President of the Society, in writing, an accurate statement and description, verified in such manner as the Executive Committee may direct, of the character of the soil, and the process in preparing it, including the quality and quantity of the manure applied in raising the crop, or the kind and quality of food in feeding the animal, as the case may be; also the kind and cost of labor employed, and the total expense and total productions of the crop, or the increase of value of the animal, with a view of showing accurately the exact resulting profit.

Art. 8. The Executive Committee shall meet annually, at such place as it may itself choose, on or before the second Monday in January, and shall then immediately prepare a report and abstract of the transactions of the Society during the preceding year, embracing such valuable reports from committees, statements of experiments, cultivation and improvement, proceedings of County Societies, correspondence, statistics, and other matters, the publica-

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tion of which will exhibit the condition of the Agricultural interests of Michigan, and a diffused knowledge of which will, in the judgment of the committee, add to the productiveness of agricultural and household labor, and therefore promote the general prosperity of the State; and as soon as practicable the committee shall transmit such report and abstract to the President of the Senate for the use of the Legislature.

Art. 9. No officer of the Society, except the Recording Secretary, shall receive any compensation for his services. The Executive Committee shall allow said Secretary such sum for past and future services as they may deem advisable.

Art. 10. Any person may become a member of the Michigan State Agricultural Society, for one year, by paying one dollar into its treasury. Any officer of the Society may receive and forward to the Treasurer the fee requisite to a membership. By paying ten dollars into the treasury of the Society, any person may become a life member, and shall be entitled to a certificate of such membership, signed by the President and Recording Secretary.

Art. 11. The several County Agricultural Societies that now exist or may hereafter exist in this State, shall be deemed auxiliaries of the State Society, and it shall be the duty of the Executive Committee to invite and receive reports and abstracts of the County Societies, to be used in preparing the annual report to the Legislature, which is provided for by article eight of this Constitution.

Art. 12. The President and Recording Secretary of each County Agricultural Society, and all life members of this Society, may attend the annual meeting of the Executive Committee, and freely participate in all discussions which shall occur at such meeting.

Art. 13. This Constitution shall be altered only by a vote of two-thirds of the members present at an annual meeting of the Society.

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PROCEEDINGS

OF THE

EXECUTIVE COMMITTEE

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY,

FOR THE YEAR 1858.

SPECIAL MEETING, JULY 19TH AND 20TH, 1858.

In pursuance of a call issued by the President, the Executive Committee met at the Michigan Exchange on the evening of Monday, July 19, 1858, the following members being present: C. Dickey, President; B. Follett, Treasurer; E. N. Wilcox, C. W. Greene, H. G. Wells, Horace Welsh, J. S. Tibbits, J. J. Newell, J. B. Crippen and A. N. Hart.

On motion of Mr. Crippen, B. Follett, Esq., was appointed Secretary *pro tem.*

Mr. Follett tendered the resignation of the Secretary of the Society, J. P. C. Emmons, Esq., which was accepted by the committee.

On motion of Mr. Wilcox,

Resolved, That a committee of three members be appointed by the chair to recommend the name of some proper person to fill the office of Secretary for the remainder of the year.

The President appointed as such committee Messrs. Wilcox, Hart and Crippen.

The committee having retired and consulted, reported that they had agreed upon R. F. Johnstone, editor of the

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Michigan Farmer, as their choice for Secretary, to fill the vacancy then existing.

The report was accepted, and the recommendation of the committee adopted. Mr. Johnstone being present, was notified of his election, and invited to enter upon the duties of his office.

Mr. Crippen offered the following resolution, which was adopted:

Resolved, That this Committee are of the opinion that the interests of the State Society require that its Secretary for any year should prepare for publication its transactions for such year, and that such duty is expected to be performed by any person accepting the office for this year.

The Treasurer made a verbal report, as follows:

That within the past month he had received from the State Treasurer the sum of two thousand dollars, which was the amount appropriated by law in aid of the Society for the present year, which sum he had immediately applied to the payment of the premiums awarded by the Society at its Fair in 1857, in the order in which they had been entered in the book of warrants by the late Secretary, J. C. Holmes, and that up to the date of the present meeting about fifteen hundred dollars had been so paid. The remainder of the premiums would be paid as soon as the business could be transacted. The warrants had not been signed by the Secretary, but were all in the possession of the Treasurer. The action of the Treasurer was submitted to the Committee for their sanction.

On motion,

Resolved, That the action of the Treasurer in relation to the payment of the awards, be and is hereby approved, and that the Secretary is hereby directed to sign the warrants remaining unpaid.

Mr. Wilcox made a statement of the propositions submitted on the part of citizens of Detroit, with regard to

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grounds and buildings suitable for the accommodation of the annual exhibition, as follows:

1. The grounds occupied by the Society for the past two years, with the fences, buildings, and fixtures thereon, could be had on the very reasonable terms of $500, and if accepted would certainly save the Society a very large outlay. It was true, that a very large amount of the subscriptions now received were on the express condition that the Fair if held at Detroit, should be within the limits of the city; but if this proposition were accepted, at least $1500 would be saved, which would otherwise have to be paid for the erection of buildings.

2. Mr. King offered a very eligible site for the Fair, on a portion of the city known as the Cass Farm. This lot was situate near the junction of the Grand River Road with Woodward Avenue, just behind the hay and wood market on Cass street. It was approached by several streets, and in many respects was very preferable. The terms for the lot were, that the Society could have from twenty to twenty-five acres, to use for the Fair, for $200; or Mr. King would fence in with a good and sufficient fence, twenty acres, for $500; the fence to be his; or he would in addition thereto, for the sum of $1,400 more, put on the grounds, buildings equal to those now on the grounds at Hamtramck, the buildings to be his, after the Society had done using them for 1858.

3. Mr. S. S. Foster offered the use of his grounds, named "The Ladies' Riding Park," situate on Woodward Avenue, some distance above the Grand Circus. These grounds contained nearly twenty acres; were already fenced, with a good tight seven foot fence; had a well worked half mile track, and some other fixtures which could be used by the Society. The terms were for the use of the grounds, fences and fixtures, for $250, with leave to erect and take off such buildings as the Society might require, at any time within the duration of said Foster's lease; and the rate of $300

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would only be charged for the use of the grounds should a Fair be again held in the same place. If no Fair were held, then no charge to be made. Liberty would also be given to alter the fence, and to erect gates and construct entrances wherever they might be required.

Mr. Wells submitted propositions on the part of the citizens of Kalamazoo:

Should it be decided to hold the Fair at Kalamazoo, the grounds now occupied by the County Society, and the race track adjoining, would be put at the service of the Society at a cost not to exceed $100. These grounds were triangular in shape, and were now fenced on two sides. The approach to these grounds was all that could be desired, and the space within was ample. The citizens of Kalamazoo had already agreed to subscribe $1500, and when it was once ascertained that the Fair was to be located at that place, this amount would be largely increased, possibly by three or four hundred dollars more. The necessary buildings could be erected at much less expense than in Detroit, as lumber and labor could be procured for less prices; and on very reasonable terms. The only difficulty would be for accommodations, as there was no doubt that if the Fair were held so far west, and the weather should be favorable, the population of the western counties would turn out *en masse*. To meet this contingency, arrangements could be made with the Central Railroad, by which special trains would be run night and morning as far east as Marshall, and the hospitalities of the citizens of Galesburgh, Battle Creek and Marshall, could be depended on to accommodate large numbers. The citizens of Kalamazoo, and of the surrounding country, would also use every exertion to prevent man, woman or child from going away dissatisfied. The village of Kalamazoo was not quite as large as Detroit, but the people who resided there had hearts quite as large, and no one would be allowed to suffer for want of a resting place. The citizens of Kalamazoo

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were also desirous that the people of the State should have an opportunity of inspecting the State institution located there, as well as the public educational establishments, which were on a large scale, and which would afford lodging room for all who might favor the village with their presence during the fair. There was little doubt also, that the interests of the Society itself would be greatly promoted, by moving the Fair westward, as it was well known that its benefits were not appreciated by the people of Detroit.

Mr. Crippen offered the following resolution:

Resolved, That it is the opinion of this Committee, that all proposals being equal, it is the policy of the State Society to hold the next Annual Fair at some point other than the city of Detroit.

Mr. Tibbitts moved that the said resolution be laid on the table, but it was negatived.

Mr. Newell moved that the Committee adjourn to meet at eight o'clock to-morrow morning, to examine the several grounds offered by the citizens of Detroit on which the Fair may be held.

Negatived.

The resolution of Mr. Crippen was then laid on the table.

Mr. Wilcox offered the following resolution:

Resolved, That the Secretary be directed to address a circular note to each member of the Viewing Committee, informing the party of his or her appointment, and requesting a reply, which shall state whether his attendance can be depended upon, be sent in time sufficient before the Fair to permit the Executive Committee to fill any vacancies. The omission to reply will be considered a declina- of the appointment.

Adopted.

Mr. Newell offered the following resolution:

Resolved, That the Business Committee shall locate the

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Fair of 1858, at the city of Detroit, provided that a reliable subscription of $200 be raised within ten days from this date; otherwise the Fair shall be held at Kalamazoo.

Mr. Crippen moved to adjourn. Lost.

Mr. Tibbitts offered the following resolution as a substitute:

Resolved, That sufficient inducement has already been offered by the citizens of Detroit to warrant the Business Committee in locating the Fair at that point.

Laid on the table.

On motion, the Committee adjourned till eight o'clock to-morrow morning.

—

Tuesday Morning, July 20.

The Committee met, and the President being absent,

On motion of Mr. Wells,

A. N. Hart, Esq, was chosen President, *pro tempore.*

On motion of Mr. Newell,

The Committee then adjourned to visit the several grounds on which it was proposed that the Annual Fair should be held.

On their return,

On motion of Mr. Newell,

The resolution offered by him last evening, relative to the location of the Fair, was taken up and passed.

On motion of Mr. Greene,

Resolved, That a vote of thanks be tendered to the citizens of Kalamazoo for the liberal propositions which have been submitted by them to the State Society for its accommodation during its Annual Fair.

On motion of Mr. Crippen,

Resolved, That the Business Committee be authorized to contract with S. S. Foster on the terms mentioned in the proposals, for the use of the grounds known as the Ladies

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Riding Park, and that the Fair be there located, if held in Detroit.

Adopted.

On motion of Mr. Welch,

Resolved, That the Common Council of the city be requested to make suitable provision for police, and for the regulation of the omnibuses and carriages, by establishing stated rates for the conveyance of passengers to and fro.

Table.

On motion of Mr. Crippen,

Resolved, That the Committee do now adjourn to meet on the 28th of September, at 7 o'clock P. M.

Adopted.

MEETING OF EXECUTIVE COMMITTEE, SEPT. 30, 1858.

The President called the Committee to order at the Michigan Exchange at 7½ o'clock P. M.

Mr. Tibbits moved that the attention of the Committee be called to the rules and orders for the annual exhibition, and stated that in the case of entries of swine two entries had been made of a single animal, and offered the following resolution:

Resolved, That no hog, sheep, or other animal, entered for any single premium, be permitted to compete as one of a pen or as one of a herd.

On motion the consideration of said resolution was indefinitely postponed.

The committee on Short Horns having stated to the President that they were unable to agree, requested leave to withdraw, and also that another committee might be appointed to make the examinations and awards they could not decide upon.

The President appointed Messrs. James Taylor, J. McKenzie, Gilbert Gage, E. O. Humphrey and Samuel Lyndon, as such new committee.

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Mr. Tibbits offered the following resolution:

Resolved, That all awards made to a single animal that has taken a premium as part of a pen or herd be annulled.

Mr. Montgomery submitted the following as a substitute:

Resolved, That the award made to Dr. A. A. Gardner on his grade boar pig, as the best boar in his class, be confirmed.

Resolved, That the premium awarded to Dr. A. A. Gardner on his pen of the best four grade pigs be annulled, for the reason that one of the said animals has already been awarded the first premium in his class.

Laid on the table.

Mr. Welch stated that the committee on Class 17, Division A., stable of colts, were in doubt as to the correct meaning of the premium list, and asked for instruction relative to the same. He therefore offered the following resolution:

Resolved, That the word "colts," where used in the premium list in Division A., Class 17, shall be construed to mean all progeny three years of age and under.

Adopted.

Mr. Newell offered the following resolution:

Resolved, That the introduction of the specification requiring cattle to be tested to draft, in Class 8, Division A., is not covered by the general rule which excludes animals that have drawn a premium at a previous exhibition of this Society.

Adopted.

Mr. Newell moved that an additional member be added to the committee on Miscellaneous Articles, and that said additional member be one of the Executive Committee.

Agreed to.

The President appointed Mr. Hart as such additional member.

Mr. Follett offered the following resolution:

Resolved, That the Michigan Central Railroad Company,

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through its General Superintendent, R. N. Rice, Esq., have permission to enter one or more locomotives, for competition in their appropriate Class.

Adopted.

The Committee adjourned till to-morrow evening, at 7½ o'clock.

—

Friday Evening, Oct. 1, 1858.

The Executive Committee met, in pursuance of adjournment.

Mr. C. W. Greene made a statement in reference to the awards made on the Class of stable of colts.

On motion of Mr. Canfield, the subject was postponed until the next meeting of the Executive Committee.

The Committee then adjourned.

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PROCEEDINGS

AT THE

Annual Meeting of the Executive Committee,

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY,

Held December 28th, 1858, at Detroit.

In pursuance of a notice, regularly given by the President, the members of the Executive Committee for the year 1859, met at the Michigan Exchange on Tuesday, the 28th of December, 1858.

The roll of the members was called as follows:

Hon. Charles Dickey, of Marshall, President.

B. Follett, Esq., Ypsilanti, Treasurer.

R. F. Johnstone, Detroit, Secretary.

Members elected to serve for the year 1859:

A. N. Hart, Lapeer, Lapeer county; J. B. Crippen, Coldwater, Branch county; J. H. Richardson, Worth, Tuscola; W. H. Montgomery, Ida, Monroe county; E. N. Wilcox, Detroit, Wayne county; Horace Welch, Ypsilanti, Washtenaw county; D. Henderson, Allegan, Allegan county.

Members elected at the annual meeting of the Society, October 2, 1858, and to serve for the years 1859 and 1860:

Hezekiah G. Wells, Kalamazoo, Kalamazoo county; J. E. Kitton, St. Clair, St. Clair county; H. E. Degarmo, Lyons, Ionia county; H. P. Sly, Plymouth, Wayne county; James Bayley, Big Beaver, Oakland county; A. S. Berry, Adrian, Lenawee county; Archibald Jewell, Dowagiac, Cass county.

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Of these there were present the President, Treasurer, Secretary, Messrs. A. N. Hart, J. B. Crippen, E. N. Wilcox, Horace Welch, H. E. Degarmo, H. P. Sly, James Bayley and A. S. Berry.

The President announced that the first business of the Committee would be the reading of the report of the Secretary.

The Secretary accordingly submitted the following report and statement of the business of the Society:

REPORT OF THE SECRETARY.

In accordance with the regulations of the Executive Committee, the Secretary submits the following report for the year 1858.

It is well known to the Executive Committee, that from the time of the organization of the State Agricultural Society, on the 24th of March, 1849, up to the 12th of January, 1858, no change had taken place in the office of Secretary. During the whole of that period, being nine years, J. C. Holmes, Esq., had fulfilled the duties of that office. At the annual meeting in 1857, Mr. Holmes being then occupied with his duties as Professor of Horticulture, at the State Agricultural College, signified to the Society that he could no longer be a candidate for the office, and a successor was elected, who came into office on the 12th of January, 1858. That successor was J. P. C. Emmons, Esq. Mr. Emmons finding that the duties incident to the office interfered with his professional engagements, on the 19th of July, 1858, tendered his resignation, and the present Secretary was chosen to fill the vacancy, at a special meeting of the Executive Committee. At the annual meeting he was chosen for the year 1859, by the votes of the Society. This brief statement of the Secretaryship is submitted, because the past year, is the first one in which a change in the office has taken place, and renders it not inappropriate that this report should be accompanied with a

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brief review of the financial history and the position of the Society when the present officers assumed their duties, which may serve as a guide in some degree for the future management of its affairs. This period also forms a good starting point from whence to make such other changes and alterations in the conduct of the Society, as its progress, and the advanced position of agriculture in Michigan may require.

The first meeting of the Society was held at Lansing, on the 22d of March, 1849, and at it the first officers and Executive Committee were appointed. This latter body met at Detroit on the 22d of May, and designated the place and time of holding the Annual Fair, and passed a resolution appropriating one thousand dollars as awards for premiums.

From the abstract of the Treasurer's report published in the Transactions of that year, I find the receipts and expenditures were as follows:

RECEIPTS.

Cash received from the State,.....	$ 400 00
" from membership tickets at the Fair, 1849,	1,198 00
" from single " " "	1,301 10
" from articles sold and premiums returned,	36 00
" of city subscriptions to defray expenses,..	523 00
" from sale of lumber,.....	465 81
	$3,923 91

EXPENDITURES.

Paid for premiums,.....	$ 808 50
" for lumber and carpenters' account, and rent of ground,.....	1,114 66
" expense of Fair at Detroit,.....	736 70
Cash on hand,.....	1,109 08
Two notes for part payment of lumber,.....	154 97
	$3,923 91

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In 1850 the Annual Fair was held at Ann Arbor, and I gather from the published abstracts of the Treasurer's report, the following statement of the finances for that year:

RECEIPTS.

From cash and notes on hand of last year,.....	$1,264 05
" balance of Detroit subscriptions of 1849,..	28 00
" the State appropriation of 1850,.....	400 00
" sale of tickets for 1850,.....	2,617 31
" sale of lumber and other articles,.....	686 90
" subscriptions at Ann Arbor,.....	528 45
	$5,524 71

EXPENDITURES.

For diploma, including engraving, design, &c.,.	$ 412 00
" salary of Secretary for 1859 and 1860,.....	800 00
" printing and transportation of lumber, &c.,.	403 20
" premiums in cash and books for 1850,.....	1,385 00
" expenses of Fair at Ann Arbor,.....	2,058 39
Cash on hand,.....	466 12
	$5,524 71

In 1851, I again glean from the Treasurer's report the following data as the receipts and expenditures for that year, the Fair being held at Detroit:

RECEIPTS.

Balance in treasury from previous year,.....	$ 466 12
Subscriptions of citizens of Detroit,.....	846 50
Tickets and balance of 1850, received from T. S. Finley and others,.....	39 50
Proceeds of tickets sold at Fair,.....	2,878 67
Received from State Treasurer,.....	1,000 00
	$5,230 79

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EXPENDITURES.

Expenses of Executive Committee,.....	$ 156 23
Salary of Secretary,.....	500 00
Diplomas, medals and books for premiums,.....	480 13
Cash premiums, ...	1,308 00
Lumber and buildings for Fair,.....	2,204 63
General expenses,.....	951 59
	$5,690 49

In this year it will be seen there is a debt created of $369 70, as nearly as I can make it from the report.

In 1852, I find that the Treasurer's report gives the following returns :

RECEIPTS.

Cash from proceeds of last year,.....	$ 19 68
Sale of tickets for the Fair of 1852,.....	2,760 71
Rents of ground and sales of articles,.....	176 50
Received from State Treasurer,.....	1,000 00
Received from Detroit subscriptions,.....	636 45
	$4,593 34

EXPENDITURES.

Paid balance due from last year,.....	$ 369 70
Paid lumber account,.....	548 40
Paid carpenters' work,.....	942 02
Paid engraving and printing,.....	118 50
Paid expenses of Executive Committee,.....	122 14
Cash for premiums paid,.....	1,463 22
General expenses of Fair,.....	970 45
Secretary's salary,.....	500 00
	$5,934 43

This again leaves an apparent balance due of only $441 09, but the expenditures only include those paid previous

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to December 17th, and the report does not show the whole of these expenditures.

In 1853, there was no report from the Treasurer published, but on the contrary a brief synopsis by the financial committee, that does not enter into any details. From it I gather that the accounts for the year were:

RECEIPTS.

Collections on Detroit subscriptions,.....	$ 947 63
Receipts at Fair ground,.....	4,406 31
From all other sources,.....	1,482 49
	$6,836 43

EXPENDITURES.

Were for the year,.....	$6,661 98
And the debt of the Society was, as per report,	534 18
	$7,196 16

The balance due according to this, was $349 73; but the Committee add there are some checks on the Treasurer, issued for premiums, still outstanding, of which the amount is unknown.

In 1854, there was no report published, and the only record which I find is that the sub-committee on finance, stated that they had not had time to make out a written report for that year at the annual meeting. No copy of the Treasurer's report for that year, nor any record of it is to be found, or was delivered to me, so that I could refer to it to fill up the gap thus left. I perceive, however, by a reference to page 11, of the 7th volume of Transactions, that the sum appropriated for premiums at the Fair of 1854, amounted to $4,500; that the amount of drafts drawn on the Treasurer to pay for the cash premiums of that year was $3,070; and that the amount drawn for current expenses and indebtedness the past year, was $4,070 08.

The following year the Secretary reports, p. 267, vol. 7,

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that no financial report had been made. He also reports that the lumber having been directed to be sold under the direction of Jonas H. Titus, he deposited with the Treasurer on account of sales $612 20; that the lumber had cost about $2,000, and the loss on it was about $1,400.

At the meeting in December, 1855, the finance committee seem to have taken the subject in hand, and according to their report on page 277 of vol. 7, the indebtedness of the Society is thus reported:

For over drafts due on the 1st of January,.....	$1,532 67
Drafts for premiums not yet paid,.....	389 00
Interest account due H. H. Brown, Treasurer,..	245 00
Expenses of Executive Committee,.....	122 37
Salary of Secretary,.....	500 00
Amount paid for silver-ware for premiums,....	121 00
S. S. Barrows for lumber and work on Fair grounds of 1854,.....	150 00
Total,.....	$3,060 04

The Treasurer in his report for that year states that he paid as follows:

The over-draft above mentioned,.....		$1,532 67
Drafts for premiums of 1854 as above,.....		389 00
Interest account as above,.....		245 00
Drafts of the Executive Com., which include,		
1. The expenses of Ex. Com., as above,.....		122 37
2. Salary of Secretary, as above,.....		500 00
3. Silver-ware, as above,.....		121 00
4. S. S. Barrows, for lumber and work, as above,.....		150 00
Total debt,.....		$3,060 04
He also paid on account of premiums of 1855,.....	$1,372 00	
To Treasurer for expenses,.....	15 00	
On rent of office,.....	83 00	

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For printing expenses,.....	$224 00	
For feed of animals at Fair,.....	424 86	
For meals, checks, address, and sundry expenses,.....	610 12	
Building and fitting up Fair ground, and superintendents,.....	3,018 46	
		5,747 44
		$8,807 48
The receipts are summed up for the year to have been,.....		8,477 21
Due H. H. Brown at that time for advances,...		$330 37
In addition to this, however, there was due for premiums then unpaid,.....		2,572 50
For checks of the business committee,.....		97 23
Total debt then due,.....		$3,000 00

In 1856, as it is well known, the Society located the Fair at Hamtramck, and for this year the report of the Treasurer was as follows:

RECEIPTS.

From the State appropriation,.....	$2,000 00
Detroit subscription of 1855,.....	20 00
" " of 1856,.....	1,518 96
From the receipts of the Fair,.....	5,420 23
Total,.....	$8,959 10

The expenditures are reported as follows, and include the debt of 1855:

Paid premiums of 1855,.....	$1,077 87
Paid premiums of 1856,.....	1,620 00
Orders for accounts of Society for 1855–6,.....	6,415 31
	$9,113 18

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This left a balance due the Treasurer of.....	$153 99
There was also due orders for premiums of Fair of 1855,.....	271 50
For premiums for which orders had not yet been drawn,.....	523 00
Due to H. H. Brown, late Treasurer,.....	300 00
Other unsettled liabilities of the Society,.....	340 34
Making a debt remaining of.....	$1,588 84

For the succeeding year 1857, the Treasurer reported that the receipts and expenditures had been as follows:

RECEIPTS.

From Detroit subscription of 1856,.....	$ 105 00
" " " of 1857,.....	1,066 85
" Annual Fair,.....	3,013 15
" State of Michigan,.....	2,000 00
	$6,185 00

EXPENDITURES.

Paid H. H. Brown and B. Follett for advances,.....	$478 99	
Paid orders drawn by Secretary for premiums and indebtedness of the Society, ...	5,668 84	
		6,147 83
Leaving a balance in hands of Treasurer of.....		$37 17

When this small balance was reported, however, it must also be borne in mind that not a single dollar of the premiums awarded at the Fair of 1857 had been paid. These premiums and some other accounts together amounted to about $2,500, and to supply this deficiency, the only resort was to depend on the State appropriation and the credit of the Society for the ensuing year.

It will be noticed by a glance at the statement submitted, that a debt of a few hundred dollars was created as

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far back as 1851, and it seems evident that this debt was increased every year afterwards, although the amount of increase cannot be shown, from the habit of not giving in the reports the actual expense incurred each year, but only the payments and receipts, and thus carrying forward year after year unknown balances, which finally culminated when they had reached the large sum of unpaid debts amounting to over three thousand dollars in 1855. To meet that large debt, the practice of anticipating the State appropriations was resorted to, and that practice must have been adopted in 1854 or 1855, for I find that the Secretary reports that in 1855 the premiums, to the amount of $2,572 50, were unpaid, and the whole receipts, including the State appropriation, had been used in liquidating the previously contracted debts, and the expenses of the Fair of that year, and yet no complaints were heard of the non-payment of premiums.

In 1856, the receipts of the Fair and the Detroit subscriptions were much larger than they had ever been before, and that, together with somewhat less expense in the management of the annual exhibition, which was held at Hamtramck that year, enabled the Society to reduce its debt from three thousand dollars to a little over fifteen hundred. The next year the annual exhibition was again held at the same place, and though the expenses were somewhat reduced, the small amount of the Detroit subscriptions, and the misfortune of having extremely unfavorable weather during two days of the Fair, reduced the receipts so that there was only sufficient to pay the expenses in part, and the old debt of the Society, leaving the premiums and a portion of the expenses to be again met on anticipation of the State appropriation, and the credit of the Society. It is to this period in the history of the finances we are brought by the statement above recited, and it is at this time, when there was reported

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$37 17 in the treasury, and a debt of $2,500 and over due, that Mr. Emmons became the acting Secretary.

At the annual meeting of the Executive Committee in January, a resolution was adopted that the Secretary should not issue the certificates of premiums, until he was notified by the Treasurer that the appropriation made by the State, for the aid of the Society, had been received. This course was rendered necessary under the circumstances. At the same meeting, E. N. Wilcox, of Detroit, was made chairman of the Business Committee. This selection was most fortunate for the Society, as he immediately took a very warm interest in promoting its welfare, and after much effort succeeded in raising sufficient funds to enable the Society to ask for the appropriation coming to it, and thus warrant the State officers in paying it over, according to the provisions of the law. The Treasurer accordingly received the sum of $2,000 from the State in July, and immediately commenced paying out the premiums awarded in 1857. It was found, however, that this amount would not be sufficient, and accordingly at a special meeting of the Executive Committee, held on the 19th of July, the Business Committee was authorized to borrow $300 more. From this it will be seen that up to the date of the Annual Fair of 1858, the finances of the Society were as follows:

Balance in the hands of the Treas'r Jan. 15, 1858,	$37 17
Received from the State appropriation,.....	2,000 00
Received from loan authorized,.....	300 00
	$2,337 17

Against this there were the premiums of 1857, amounting altogether to the following sums:

On Division A—Cattle,.....	$615 00
" do—Horses,.....	431 00
" B—Sheep,.....	362 00
" do—Swine,.....	47 00

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On Division B—Poultry,.....		$29 00
" C—Farm Implements,.....		159 00
" D—Butter, Cheese and Honey,....		74 00
" E—Domestic Manufactures,.....		148 00
" F—Painting, Needlework, &c.,.....		127 00
" G—Flowers, Fruits, Vegetables,. ..		259 00
" H—Grain, Seeds, &c.,.....		58 00
" K—Miscellaneous Essays, &c.,.....		64 00
		$2,374 00
Premiums paid for 1856,.....	$ 25 50	
Expenses of Executive Committee,.....	109 13	
Expenses of Treasurer in disbursing premiums, ...	16 30	
Loan and Interest,.....	304 67	
		455 60
		$2,829 60

From this it will be seen that at the period of the commencement of the State Fair of 1858, there was a debt due of $492 43, after the appropriation of 1858 had been used up.

The whole resources of the Society at that date were, therefore, only the proceeds of the Annual Exhibition and the subscriptions of the citizens of Detroit.

The proceeds of the exhibition, as shown by the Treasurer's report, were.....		$4,423 80
The proceeds of the Detroit subscriptions up to the present date, have been.....	$1,135 00	
Less 5 per cent. for collection,.....	56 75	
		1,078 25
		$5,502 05

Against this there were the following expenditures incurred:

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First—The payment of the awards of premiums at the Fair of 1858, which were as follows:

Div. A, Class 1—Cattle, Short-horns,.....			$217 00
" 2— " Devons,.....			180 00
" 3— " Herefords,.....			56 00
" 6— " Cross-bloods,.....			75 00
" 7— " Grade and Native,.....			75 00
" 8— " Working Oxen,.....			39 00
" 9— " Steers, ...			77 00
" 10— " Fat Cattle,.....			14 00
" 11— " Milch Cows,.....			14 00
			$747 00
Div. A, Class 13—Horses of all work,....	$188 00		
" 14—Blood Horses,.....	15 00		
" 15—Draught Horses,.....	71 00		
" 16—Trotting Horses,.....	171 00		
" 17—Family of Colts,.....	75 00		
" 18—Match & Single Horses,	111 00		
			631 00
Div. B, Class 1—Spanish, Saxon and Silesian Sheep,.....	$95 00		
" 2—French Merinos,.....	42 00		
" 3—Mutton Sheep,.....	73 00		
" 4—Cross-bred Sheep,.....	79 00		
" 7—Swine,.....	68 00		
" 8—Poultry, ...	20 00		
			377 00
Div. C, Class 1, 2, 3, 4—Farm Implements,.....			165 00
Div. D—Butter, Cheese, Sugar and Honey,.....			55 00
Div. E—Domestic Manufactures,.....			248 00
Div. F—Painting, Needlework, &c.,.....			109 00
Div. G—Flowers, Fruits and Vegetables,.....			237 00
Div. H—Grain, Flour, Bread,.....			121 00
Total amount of cash premiums,.....			$2,690 00

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Second—The expenditures for the Annual Exhibition of 1858, which are as follows:

1. The rent of grounds used for Fair, ...		$250 00
" of the grounds adjoining,.....		50 00
		$300 00
2. The buildings as contracted for,..	$1,650 00	
Shingle roofs, rails around grounds, seats around amphitheater, &c.,.	558 00	
		2,208 00
3. Watchmen and police at night,....	$228 00	
Day watch and workmen during Fair,.....	221 50	
		449 50
4. Miscellaneous expenses, for cartage, messengers, steam engine, use of carriages, brooms, furniture, &c.,.....		325 94
5. Gate keepers,.....		68 50
6. Superintendents of halls and departments,..		98 25
7. Marshals and horses,....		92 00
8. Rent and expenses of Secretary's office for stationery and assistants,.....		247 54
9. Printing and advertising,.....		491 91
10. Meals for committees and entertainment of visitors,.....		454 20
11. Decoration of halls and grounds,.....		480 16
12. Hay, straw and feed,.....		218 00
13. Treasurer's office, expenses of,.....		145 30
General expenses of Fair and Soc'y to Jan. 1, '59,.		$5,579 80

RECAPITULATION.

General expenses,.....	$5,579 80
Premium list,.....	2,690 00
	$8,269 80
Total receipts as above,.....	5,502 05
Balance due on debt of Society,.....	$2,767 75

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Against this the Society possess:

Buildings and fixtures on ground at Detroit, valued at	$2,500 00
A large tent, with fixtures,	200 00
The plate for the Diploma,	300 00
Furniture, flags and miscellaneous property, worth about	250 00
	$3,250 00

In concluding this part of the report, it may be well to note that while the Detroit subscription nominally summed up almost $1,800, there has been as yet but $1,135 received. There are hopes that a portion of the balance may be collected, but both the Secretary and one or two collectors employed by the Business Committee, have labored with diligence so far, and have got only plenty of promises, and in some cases, refusals from men whose position and standing should place them beyond suspicion of repudiation in such a case.

In considering the financial position of the Society, it will be seen that the difficulties arise principally from the fact that the income at the annual exhibition is not sufficient to meet the outlay, with the increased and increasing list of premiums, that it has been deemed necessary to adopt during the several years which the Society has been in existence. The Fair has now been held in the vicinity of Detroit, steadily for a series of years, and whilst the city and surrounding country have been largely increasing their population, yet the receipts of the Society have not increased in proportion. It is evident that the system upon which membership and admission is permitted, is wrong, or there would be more favorable results. All observant members have come to the conclusion that the privileges granted by membership tickets are abused, and that tickets of this kind are bought by parties, on speculation, and are used so that they defeat the intentions of

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the Society, and deprive it of a large portion of its legitimate revenue.

The system now in operation of granting membership tickets, and allowing them to admit all who may present themselves in connection with the persons holding them, and at the same time having no guard against transfer, is a bad one, and evidently needs amendment or alteration. This system prevailed in New York and Ohio for some years, and the results were the same as they have been with us, that the societies never paid their way without large appropriations from the State.

In New York the system adopted is to sell membership tickets; these member's tickets are accompanied with a badge and four tickets that admit only four persons, each one time. The membership ticket must be purchased, as a matter of course by exhibitors, and the badge is their admission.

The Ohio rule, which seems to be the best adapted to meet our wants, provides that any person paying one dollar may enter as many different articles in any of the departments as they may please, except in horses and cattle. In these the entrance fee is one dollar for the first entry, and fifty cents for each additional animal. But no additional fee is required to enter any animal for a sweepstakes premium. Each exhibitor is furnished with an exhibitor's ticket, which is good only at the exhibitor's gate. All other tickets are single and are charged at the rate of twenty-five cents each.

It is estimated that during the State Fair recently held at Detroit, on the first and fourth days, not less than 6,000 persons visited the Fair grounds each day, whilst on each of the second and third days, certainly not less than from 10,000 to 12,000 visitors were present, making an aggregate of about 35,000 in the whole. From the whole of these it will be seen that the receipts were, deducting for entries $1,200, only $3,206 80, or an average of only nine

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cents each, allowing nothing for what was received for the admission of carriages and horses.

The adoption of the Ohio system would simplify the whole arrangement, and it is generally believed it would give better satisfaction. The Annual Fair of the State Agricultural Society has become a State necessity, and all that its officers have to do to be sure of having it placed on a fair financial position is to adopt the principle of rendering the Fair as attractive and instructive as possible, and then adopting rules that will secure from each visitor what is its just due, placing every one on equal footing, and the results will be found eminently satisfactory.

With the Fair located another year at Detroit, where it will have the advantage of having convenient grounds and buildings already prepared, and for which there will be little outlay by way of preparation, in comparison with what is usual, and with a population of 80,000, one half of which will probably be visitors, if the attraction is sufficient to draw them out, and with the rules properly amended and fixed, it may be reasonably expected that the Society will soon attain a fair financial standing, especially if the State should act with that liberality towards it which it has shown on all occasions since its organization.

THE ANNUAL FAIR OF 1858.

It is unnecessary to go into details concerning the Fair of 1858. It is well known that the Society, owing to unforeseen occurrences, encountered an opposition that rendered it imperative that many expenses should be incurred, and preparations made, which would in an ordinary state of events have been somewhat curtailed. Hence it may be safely affirmed that, had the Business Committee not thought it their duty to strain every resource to the utmost which they could command, to show that there was no good cause for the general apathy and opposition which existed in relation to the annual exhibition, it is probable

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that some of the expenses incurred might have been lessened in amount. Experience also, in the management of so large a business, within the short space of a week, is necessary, to enable the managers to know in what direction to practice a cautious economy, and to enable them to become familiar with all the wants which are to be provididfor. It is believed, however, that during the State Fair of 1858, there were few bad mistakes made, and that a general impression was left on the minds of community, that Michigan could make as respectable a show when the farmers turned out, as any State in the west. It may be well to add here, that, with the facilities now existing, and with the experience gained, and with propitious weather, it is probable that the Fair of 1859 can be made to excel in interest and extent, in every department, that of the past year.

THE PREMIUM LIST AND RULES.

It may not be advisable, for the next year, to increase the aggregate of the premiums, but the list should undergo a thorough revision and re-classification; and accompanying each class, there should be special rules which would relieve Committees from all doubt as to how the premiums should be awarded, and thus make the decisions and awards final, and so that no appeal need be taken at any time.

THE TRANSACTIONS.

The copy for the volume of Transactions for 1857 is in part in the hands of the printers. The short time which elapsed between the time of the appointment of the present Secretary and the Annual Fair, and the multifarious duties incident both before and after that important event, left no time to attend to the preparation of the volume, but it will be issued at a date as early as it can be put through the press.

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THE ANNUAL EXHIBITION.

In submitting this report, it may be well to call attention to the propriety of rendering the Annual Exhibition as highly instructive and interesting to the agricultural community as possible. No method would be more apt than to hold out some inducement to the breeders of pure bred stock in other States to bring specimens to be shown in this State. It is the only method by which our knowledge of a true standard of perfection can be gained, and by which, in the presence of the great mass of the farmers, a comparison can be made of what has been done in this State to improve, with what has been done in other States. It must be remembered that whilst the Society should be conducted with a just regard for economy in its several departments, its true end and aim is not to make money, nor to be an institution solely for the purpose of gaining a certain amount of receipts. It is rather intended not only to promote improvement in Agriculture and the Industrial and Mechanical Arts, but also to enable us to measure how fast and how far we have progressed, in comparison with acknowledged standards.

All of which is respectfully submitted.

R. F. JOHNSTONE,
Secretary.

On motion,

The Report of the Secretary was adopted and laid upon the table.

The President appointed Messrs. Crippen, Welsh and Berry, the Committee on Finance.

Messrs. Bayley, Degarmo, Crippen, H. P. Sly and the Secretary, the Committee to revise the Premium List.

The Committee retired for the purpose of entering upon their duties, and the Executive Committee adjourned.

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December 29, 1858.

The Committee met, and Mr. Bayley reported that the Committee on the Premium List had gone through the List and presented a report.

On motion,

The report was accepted, and the Executive Committee resolved itself into a committee of the whole, for the consideration of the same.

Mr. Wilcox moved to adopt the report on Division A, Class 1.

Mr. Sly moved to amend by adding thereto a series of third class premiums. Lost.

Mr. Welsh moved to amend by striking out the premiums to be given for calves.

Lost, and the report on this class adopted.

The report on Classes 3, 4 and 5 was read and adopted.

The report provided for premiums for herds of Shorthorns a silver cup of the value of $30, and for herds of Devons a silver cup of the value of $20, which was adopted.

The report on cross bloods, grades and natives was read and adopted.

The report being read on working oxen, Mr. Welsh moved to amend by striking out the third premiums in that class.

Mr. Crippen moved to amend still further by making the first and second premiums $20 and $15.

Both amendments were lost, and the original report adopted.

The report on steers, fat cattle, and milch cows was read.

The report on steers and fat cattle was adopted.

On motion of Mr. Welsh,

The premiums on milch cows were increased, with the design of encouraging more attention to the breeding of good animals in this class, the first premium being fixed at $20, and the second at $10.

Mr. Wilcox moved that a series of premiums be given

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on foreign cattle, with a view to encourage their introduction into this State by their owners.

Lost.

The report on horses being read, Mr. Welsh moved that all third premiums, and all premiums on sucking colts, be stricken off throughout the list.

The question was divided, and the motion to amend was lost.

The report on so much as relates to horses of all work was adopted.

The report proposed that a special class for Black Hawks and Morgans be provided, and a schedule was reported and adopted.

The report on thoroughbreds was read;

On motion of Mr. Welsh,

The report was amended so as to confine the list to first and second premiums in this class.

Mr. Wilcox moved that for the purpose of encouraging the introduction of the best and most directly imported horses into this State, that a special premium be given for the best thorough bred stallion, imported into the United States within three years from the time of the exhibition, and which has been kept for service in this State for four months previous to the first of October next.

Adopted.

On motion of Mr. Wilcox,

Resolved, That a special committee be appointed to take into consideration the propriety of adopting an additional class of premiums for half bred horses, principally for carriage service, the premiums to be awarded only to progeny having one parent fully thorough bred, as shown by certified pedigree, to be submitted to the Viewing Committee.

The chair appointed as such committee, Messrs. Wilcox, Crippen and Welsh, who reported a list, which was adopted.

The report on draught horses was read and adopted.

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The report on trotting horses was read, and,

On motion of Mr. Crippen,

The list was extended so as to include yearlings and colts, as in other classes.

Mr. Wilcox moved that a rule be adopted for the government of exhibitors in this class, by which colts in the trotting class, under three years old, may be shown either by leading or driving.

The report on the stable of colts was read and adopted, and a rule made that all stock shown in this class shall be colts or fillies, not over three years old, the animals to be considered three years old until they have reached the annual date of their birth, when their fourth year commences.

During the consideration of this subject, Mr. C. W. Green was permitted to address the Committee on the subject of awards made in this class at the late State Fair, and also to submit a protest against an award made, by which he contended that he was deprived of his just rights in certain particulars.

After consideration, Mr. Bayley moved that an award be made to Mr. Green, equal in value to that offer on the Premium List, as an equivalent for an award made under instruction from this Committee.

On motion,

This subject was laid on the table for the present.

The report of the Committee on matched horses was read and adopted.

The report on jacks and mules being read,

On motion of Mr. Crippen, it was

Resolved, That a premium of $20 be offered for the best Maltese jack, not less than thirteen hands in height, to be accompanied with reliable certificates that he is a good stock getter.

The report of the Committee on sheep was read and adopted.

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The report on swine and poultry was read and adopted, with some amendment.

The report of the Committee on butter, cheese, sugar and honey was adopted, with an amendment confining the awards to cheese manufactured in this State.

The report of the Committee on farm implements, domestic manufactures, fine arts, flowers, fruits and vegetables, was read and adopted.

The Secretary being directed to classify, arrange, and divide certain classes, so that the labor of the Viewing Committees might be lessened.

The whole report was then adopted.

Mr. Hart offered the following preamble and resolutions:

Whereas, By the construction given to the terms "three "years old and under," by the Viewing Committee on Division A, Class 17, under the sanction of the Executive Committee, the stock of C. W. Green was excluded;

And whereas, The common interpetration of "three years old and under" includes animals not actually four years of age;

And whereas, The stock entered by F. E. Eldred, who received the award, and that of Mr. Green were both worthy, but this Committee are unable to determine their comparative merits at this time; therefore,

Resolved, That a sum equal to the premium awarded to Mr. Eldred be and is hereby voted to Mr. Green.

Resolved, That in the instructions given to the Viewing Committee who examined the mare and colts of Mr. Green, the Exective Committee were actuated by a design to rule out Mr. Green's stock, and acknowledge that it did Mr. Green a serious wrong, and hereby tender him our sincere regrets.

Resolved, That the Secretary is hereby directed to deliver a copy of these resolutions to Mr. Green.

On motion,

These resolutions were laid on the table.

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Mr. Wilcox offered the following preamble and resolution:

Whereas, At the last Annual Fair the stock of C. W. Green, of Farmington, Oakland county, entered in Class (14) "blood horses," consisting of "Farmingtonian," and some other animals, were excluded by the Viewing Committee, for want of sufficiently authenticated pedigree, and it appears by the records of the Society that the same stock has heretofore been admitted in said class, and actually received awards therein; and Mr. Green having satisfied this Committee, by evidence submitted, that he formerly possessed such pedigree, but had lost the same;

And whereas, Mr. Green has devoted great pains and expense to the careful breeding of said stock, and complains that the action of said Committee has worked him an injustice; therefore,

Resolved, That in the opinion of this Committee, the stock of Mr. Green, so excluded, should have been admitted into this class; but that nothing in this resolution shall he deemed to reflect upon the action of said Viewing Committee, nor to interfere with their awards of premiums.

The resolution was laid on the table.

Mr. Wilcox offered the following preamble and resolution:

Whereas, It is important that the action of this Society should be governed by such uniform rules that its awards may carry the sanction and authority of the Society for all future time—for the guidance of those interested in the improvement of stock in this State,

Resolved, That in all cases of entries of thoroughbred stock, hereafter, at the Fairs of the Society, any animal receiving a premium, approved by the Executive Committee, on production and filing with the Secretary the pedigree of said stock, shall be deemed to have received the sanction of the Society as to its pedigree, and that there-

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after it will not be deemed necessary to reproduce the same pedigree for such animal or its progeny, but reference to such award on the records shall be sufficient: *Provided, however*, That in all cases, satisfactory proof of the breeding of every animal referring to such pedigree shall be adduced.

Resolution laid on the table.

After discussion, it was, on motion,

Resolved, That the protest now on file against the payment to F. E. Eldred of the award made to him at the late State Fair, be annulled, and that the premium be paid.

On motion of Mr. Wilcox,

Resolved, That a silver medal be awarded to Augustus Day, for his shingle machine, as a mark of the appreciation in which this Society hold useful inventions in mechanics by citizens of Michigan, and that a diploma be awarded on his shingles.

Mr. Bayley offered a few remarks on the utility of draining, stating that he was practically acquainted with the value of the machine for making drain tiles invented by John Daines, of Birmingham, in this State, and submitted the following resolution, which was adopted:

Resolved, That in consideration of the great merits of the drain tile machine invented by John Daines, of Birmingham, its low price and its efficiency, the Committee commend it as eminently worthy the attention of farmers who have lands needing the improvement of drainage, and as furnishing the simplest and most easily worked means of supplying drain tiles in abundance.

On motion of Mr. Welch,

Resolved, That it be a general rule that in any class where colts are shown as proof of any qualities of a stock horse, the progeny of such horse shall be allowed to compete without reference to age.

On motion of Mr. Degarmo,

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Resolved, That the system of Ohio with regard to entries of cattle and horses be adopted as that of this State.

The statement of Simeon Davidson, in relation to a crop of wheat, was read, and referred to the Secretary to award the premium, on condition that Mr. Davidson make the necessary affidavit to it, to be filed with his account of raising the crop.

Mr. Crippen reported from the Finance Committee as follows:

Mr. President: Your Committee to whom was referred your Treasurer's report for examination, beg leave to state that they have discharged the duties assigned them, and found the accounts correct, and that there is a balance due him of $107 72.

The report was submitted as follows:

To the President of the State Agricultural Society:

The Treasurer begs leave to submit the following report:

The amount in the treasury at your Annual Meeting held in Detroit, January, 1858, was.....		$ 258 52
The receipts since that time have been:		
From dead letter office,.....		3 00
From the State Treasurer,.....		2,000 00
From premium refunded, ...		5 00
From sales of tickets at Fair of 1858,.....		4,406 80
From rent on Fair ground,.....		17 00
From Detroit subscription,.....		1,078 25
		$7,768 57
The disbursements have been as follows:		
For general fund expenses and premiums for 1857 and 1858,.....	$5,642 29	
For premiums of 1858,.....	2,234 00	
		7,876 29
Balance over paid and due Treasurer,.....		$107 72

The vouchers for the above are herewith submitted.

BENJ. FOLLETT, *Treasurer.*

Ypsilanti, Dec. 27, 1858.

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Mr. Degarmo, without making any definite motion, called the attention of the Committee to the fact that animals that had drawn first premiums were now excluded from competition for the future.

The subject was referred to the Committee on Rules and Regulations.

Mr. Bayley moved that the Premium List be reconsidered, so far as to create a special foreign list for cattle and horses.

Laid on the table.

The Committee adjourned.

—

December 30, 1858.

The Committee met.

Mr. Berry moved that the Committee proceed to nominate and appoint the several Viewing Committees for the Annual Fair of 1859.

Consideration postponed.

On motion of Mr. Crippen,

The subject of the Finances of the Society was considered, and directed to be referred to a Special Committee.

The President appointed as such Special Committee, Mr. Berry, Mr. Crippen, Mr. Hart, Mr. Follett and Mr. Wilcox.

The motion to appoint Viewing Committees was taken up, and the list gone through with and the Committees appointed.

[The names will be published with the Premium List.]

The Chair appointed Messrs. Wilcox, of Detroit, Welsh, of Ypsilanti, Kitton, of St. Clair, and the Secretary, as the Business Committee.

The time and place of holding the next State Fair was discussed, and the subject referred to the Business Committee.

Mr. Wilcox, from the Committee on Rules and Regula-

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tions, made a report, which was accepted, and, after sundry amendments, adopted.

On motion of Mr. Berry,

The subject of the awards on colts was taken up and considered; and a motion made that the whole of the resolutions submitted heretofore be referred to a Special Committee of three.

The motion was lost.

On motion of Mr. Crippen,

The motion of Mr. Bayley was taken from the table, and considered.

Mr. Hart moved as a substitute the following:

Resolved, That in the instruction given to the Viewing Committee who examined the mare and colts of Mr. Green, the Executive Committee were actuated by a design to rule out Mr. Green's stock, and acknowledge that it did Mr. Green a serious wrong, and hereby tender him our sincere regrets.

Resolved, That the Secretary be hereby directed to deliver a copy of these resolutions to Mr. Green.

The question being on the subtitute, it was lost.

Mr. Wilcox then offered the following preamble and resolution:

Whereas, By the construction given to the terms "three years old and under," by the Viewing Committee on Division A, Class 17, under the sanction of the Executive Committee, the stock of C. W. Green was excluded;

And whereas, The common interpretation of "three years old and under" includes animals not actually four years of age;

And whereas, The stock entered by F. E. Eldred, who received the award, and that of Mr. Green, were both worthy, but this Committee are unable to determine their comparative merits at this time; therefore,

Resolved, That a sum equal to the premium awarded to Mr. Eldred be and is hereby voted to Mr. Green.

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The question being on adopting this in place of the motion of Mr. Bayley, it was decided in the affirmative.

The question then recurring on the adoption of the preamble and resolution, it was also decided in the affirmative.

The Committee on Finance made a report, which was adopted, with accompanying resolutions.

On motion of H. E. Degarmo,

Resolved That the amount of salary paid to the Secretary for the past and ensuing year, be fixed at the same rate as that paid J. C. Holmes.

Mr. J. S. Tibbitts was granted leave to address the Committee relative to certain awards made in the class of swine, at the State Fair.

No action was deemed necessary in this matter.

On motion of Mr. Crippen,

Resolved, That a copy of the Transactions of the Society, from its organization, be and the same are hereby donated to the Fire Department of the city of Detroit, for the benefit of its Library, in grateful recognition of the courtesies extended by the department to the officers and members of the Society; and that the Secretary be instructed to present the same at his earliest convenience.

On motion of Mr. Crippen,

Resolved, That a Committee of four be appointed, consisting of Mr. Hart, Mr. Wells, Mr. Follett, and Mr. Degarmo, to solicit the Legislature to make an appropriation in aid of the State Agricultural Society.

The Secretary submitted the following communication, relative to a plan for rendering the Horticultural department more effective and useful, in promoting a correct knowledge of fruit in the State, and also as a method by which much false nomenclature could be rectified:

R. F. Johnstone, *Secretary of State Agricultural Society:*

Dear Sir—In accordance with your request, I submit the following suggestions with regard to the management of the Horticultural department of the Fair of the State Agricultural Society.

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The appointment of a General Pomological Committee whose duty it shall be to examine the fruits as they are placed upon the table, and see that the nomenclature is correct; placing a mark of doubtfulness upon any such as they may be unable to decide upon satisfactorily.

The General Pomological Committee to be furnished with strips of stout paper, to be placed underneath the fruits, upon the plates, with one end doubled down over the front edge, with the name of the fruit written upon it, in a clear, bold, plain hand; so that visitors can read it readily, thereby removing all pretext for the handling of the fruits. For this purpose it may be necessary to provide the Committee with a *Scribe*, especially selected for this purpose.

The General Pomological Committee should be composed of the best pomologists that can be obtained; and to them should be committed the awarding of the premiums upon seedling fruits. If good and capable men cannot be induced to serve upon a Committee, it may be best not to institute it.

The several entries to be designated upon the cards, and also upon the Committees' books, by numbers only. The names of exhibitors to be attached after the Committees shall have rendered their awards.

The reports to be delivered to some person or persons, appointed for that purpose, whose duty it shall be, before their acceptance, to examine them in connection with the rules; and if they have not been properly complied with, to return them, with the necessary directions for their amendment.

The providing of a collection of Horticultural works for reference; accessible by the Committees while in the discharge of their duties.

To forego the reading of the reports upon the grounds, and allow Committees a longer time for maturing them, with an amanuensis, if they shall desire it.

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The remission of their membership fee, to such persons as shall actully serve upon Committees, and whose names shall appear in their reports.

I also submit a system of instruction for judges, which may be modified as you think best.

As it is not the object of the Society to encourage random or unknown varieties of fruit, the Committees, where their decisions are dependent upon the number of varieties, will only count such as are correctly named.

The Committees, in deciding which are the best specimens of fruits or vegetables, where the several varieties are alike well grown, shall give preference to quality, rather than size.

No seedling shall be awarded a premium unles it shall be distinct from, and, at least, equal to any other variety of a similar kind, and of the same season; or, if inferior, shall have some superior characteristic of tree or fruit, of sufficient importance to warrant the exception; and the Committee, in awarding such premiums, shall give a concise description of it, and of the habit, vigor, fruitfulness, &c., of the tree or plants, so far as they may be able, together with the peculiar and valuable qualities that may have induced their award.

A plant, or fruit, to compete as a seedling must be of recent origin; and one that has not been described in any Horticultural publication, or shown at a Horticultural Exhibition.

Seedlings may be shown in competition for a premium by others than the original producer, where he neglects to do so.

Where a committee shall award a premium to a single variety, the name of the variety shall be reported; and when the award is to a collection of varieties, the names, at least of the varieties that have induced the award, shall be reported; and it is also especially desirable where any-

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thing of unusual interest or merit is exhibited, that it should be noticed in their report.

Respectfully,

T. T. LYON

On motion,

The communication and recommendations were referred to the Business Committee, with power to adopt the whole, or such portions, into the programme of the next exhibition, as might be deemed advisable.

No further business being presented, the Committee adjourned.

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Revised Rules and Regulations

ADOPTED FOR THE GOVERNMENT OF THE

TENTH ANNUAL EXHIBITION

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY.

GENERAL RULES.

ADMISSION AND ENTRIES.

The premiums on the list of the Michigan State Agricultural Society for 1859, are open to competitors from any State or country, on the following terms and regulations:

Individuals who desire to become members, will be required to purchase a membership ticket, with which they will receive four admission tickets. The membership ticket is not itself a ticket of admission to the grounds during the Fair, but entitles the person who owns it to all the privileges of membership under the Constitution and By-Laws.

Admission tickets to the Fair grounds will be sold at twenty-five cents for each person for each admittance.

All exhibitors of articles are required to become members by the purchase of membership tickets, which must be exhibited to the Secretary previous to making entry on the entry books.

All exhibitors of cattle and horses will be required to pay fifty cents as an entry fee for the additional stock beyond the first entry.

No checks or other tickets will be given at the gate. All tickets must be purchased at the ticket offices.

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All members acting as committeemen or judges, will be furnished with special tickets of admission, and will have a gate for their admission and egress, and they are requested to report their acceptance of office, that the Secretary may transmit their tickets previous to the Fair.

Cards entitling exhibitors and attendants to ingress and egress, may be had by application to the Secretary. These cards will be taken up, and are only to be presented at the gate set apart for such entrance.

Carriages and teams will be permitted to enter the grounds on the following conditions:

For each entry of a double team and driver,.....$0 50
For each entry of a single team,..... 25

The ticket for the team does not admit parties in the carriage. Each individual must have a ticket of admission, and deliver it to the gate keeper.

Entries of all articles for exhibition may be made at the office of the Secretary, at the Michigan Farmer office, 130 Jefferson avenue, at any time during the week previous to the Fair. All other entries must be made at the office on the Fair grounds, previous to 6 o'clock P. M. of Tuesday, the 4th of October.

Entries may be made for exhibition without competition; and Viewing Committees in the several classes may notice such as they shall deem worthy in their reports. But all such entries must be made by a member of the Society.

Programmes will be furnished to each exhibitor directing to what department, and in what locality, articles must be placed, on the days of the Fair.

Each exhibitor will be expected to have the animal or article entered in its place on the grounds, by the close of the first day of the Fair.

All persons entering animals must be sure that their stock are entered in the appropriate class, as it will be the duty of the judges to rule out any animal not answer-

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ing to the entry. And no change or alteration can be made after the books are placed in the hands of the Committees.

No exhibitor can act as one of a Viewing Committee in any class in which he is a competitor.

All pedigrees of thoroughbred, cross-blood, or half-bred animals, must be handed to the chairman of the Viewing Committee who has the class in charge, and he will deliver said pedigree, with his report, to the Secretary.

All exhibitors must be answerable for the care of their animals, as the Society will not be responsible for any losses or damages that may occur by reason of unruliness, in any case.

Entry cards will be furnished with the number and name as entered at the office.

GENERAL RULES FOR ACTION OF COMMITTEES.

Special Rules for direction of Committees will be found under the head of each class of premiums.

All judges of animals will have regard to the form, size, symmetry, and general characteristic of the breed or class of animals they are called upon to examine. Animals to be used for breeding purposes, should be considered as ruled out when evidently over-fed, and unfit to use as a sire or dam.

No person will be permitted to interfere with the Committees while performing the duties of examination. In all cases of doubt as to their powers, the Committees may refer to the President, who, if necessary, will lay the same before the Executive Committee.

Awards shall be deemed final, unless appealed from and protest filed with the Secretary before the close of the Fair.

Where an animal or article is decided not to be worthy

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of a premium none shall be awarded, although there may be no competition in the class in which it is placed.

No animal or article shall be paid more than one premium. And no animal or article shall be entered in more than one class—with the following exceptions: that in cattle, any animal may compete singly in its peculiar class, and one of a herd; in horses, an animal may compete in its particular class, and also as one of Class No. 7, Division B.

All Committees are requested to add to their report, such notes or observations, and such information as may be deemed valuable either with reference to the article, animal, or herd; or for use in the management of future exhibitions.

The Committees will have their books ready for use on Wednesday at 8 o'clock P. M., and they will be required to hand in their report on Thursday evening if possible.

All discretionary premiums, recommended by the Viewing Committees, will be referred to the Business Committee for approval.

When animals or articles have been awarded premiums, the awards will be known by the following marks:

First premium, a blue ribbon or card; 2d premium, a red ribbon or card; 3d premium, a white ribbon or card.

All persons desiring space on the grounds or buildings, must apply for the same previous to the opening of the Fair.

When a majority of a Viewing Committee are present, they shall constitute a quorum, and be authorized to award premiums; and the first on the list of those present shall be Chairman.

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GENERAL RULES IN RELATION TO CATTLE AND HORSES.

All stock entered as thoroughbred or cross bred, will be required to have statements showing their age and breeding. Native and fat cattle must have their age and mode of keeping stated.

Each animal will be required to be placed on the grounds in the division to which it belongs, and in the place arranged to its class.

The persons having charge of animals on the Fair grounds, will have a special gate assigned to them for their use, and will have tickets given to them at the Secretary's office, which they will deliver to the gate-keeper each time they enter the grounds. Only one ticket of this kind will be given to any one person on the same day.

Exhibitors of horses will be required to test the animals they may exhibit under the direction of the several Committees which may have charge of the class in which entries are made. Strict obedience to the directions will be required, as the Committee have full power to rule out of competition all who do not comply with their requirements.

All horses will be required to remain on the Fair Grounds, under penalty of forfeiture of right to compete.

Examination of cattle will take place on Wednesday, the 5th of October, from eight in the morning until three in the afternoon, for which time the track will be closed, and no traveling will be permitted thereon.

The Committee having charge of the trials of the several horses, will have full possession and command of the track during the time of such trial, and marshals will be at their command for all purposes of order and enforcement of the rules.

All stable and stall room for cattle and horses will be assigned to exhibitors in the order of their application, after Monday, September 25th.

Bulls more than a year old must be secured by a ring in

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the nose, or they will be debarred from remaining on the ground.

Stock to compete for premiums, must be exhibited by the owner or his agent. Any violation of this rule will be punished by a withdrawal of any award that may have been made.

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PREMIUM LIST

AND

AWARDING COMMITTEES

OF THE

MICHIGAN STATE FAIR FOR THE YEAR 1859.

DIVISION A.—CATTLE.

CLASS I.

Shorthorns.

Committee—C. L. Shepard, Avon, N. Y.; Gilbert Gage, Dover; Chester Yost, Ypsilanti; Samuel Lyndon, Plymouth; Wm. Whitfield, Waterford.

Best bull 4 years old or over, 1st premium,.....	$20 00
2d best bull 4 years old or over, 2d prem.,.....	10 00
3d best bull 4 years old or over, 3d prem.,.....	5 00
Best bull 3 years old, 1st prem.,.....	16 00
2d best bull 3 years old, 2d prem.,.....	8 00
3d best bull 3 years old, 3d prem.,.....	5 00
Best bull 2 years old, 1st prem.,.....	12 00
2d best bull 2 years old, 2d prem.,.....	6 00
3d best bull 2 years old, 3d prem.,.....	4 00
Best bull 1 year old, 1st prem.,.....	10 00
2d best bull 1 year old, 2d prem.,.....	5 00
3d best bull 1 year old,.....	3 00
Best bull calf 1 year old, 1st prem.,.....	8 00
2d best bull calf 1 year old, 2d prem.,.....	4 00
Best cow 5 years or over, 1st prem.,.....	20 00
2d best cow 5 years or over, 2d prem.,.....	10 00
3d best cow 5 years or over, 3d prem.,.....	5 00

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Best cow 4 years old, 1st prem.,	$15 00
2d best cow 4 years old, 2d prem.,	8 00
3d best cow 4 years old, 3d prem.,	5 00
Best heifer 3 years old, 1st prem.,	12 00
2d best heifer 3 years old, 2d prem.,	6 00
3d best heifer 3 years old, 3d prem.,	4 00
Best heifer 2 years old, 1st prem.,	10 00
2d best heifer 2 years old, 2d prem.,	5 00
3d best heifer 2 years old, 3d prem,,	3 00
Best yearling heifer, 1st prem.,	8 00
2d best yearling heifer, 2d prem.,	4 00
3d best yearling heifer, 3d prem.,	3 00
Best heifer calf, 1st prem.,	8 00
2d best heifer calf, 2d prem.,	4 00

NOTE TO EXHIBITOR.—The exhibitor shall be required to exhibit a pedigree of the animal competing, and the winner of the premium must file with the Secretary a copy of the pedigree of the animal which was the successful competitor. Where all other points are equal, the Committee is to be guided by the condition of the animal and its superior fitness for breeding purposes. The pedigree must show descent on both sides from imported stock. Directness of descent, and an acknowledged celebrity of ancestry, to rule in the comparison of pedigree. Quality of animal and fitness for breeding, with justness of proportion to be considered next after establishing purity of blood. This applies to all the improved breeds of cattle.

CLASS II.

Devons.

Committee—Warren Frink, Battle Creek; Wm. Ten Eyck, Dearborn; Wm. More, Adrian; Enos Goodrich, Goodrich; J. H. Button, Farmington.

The premiums same as for Class I.

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CLASS III.

Herefords.

The same premiums and the same committee as in Class 1, but no third premiums will be awarded in this class.

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CLASS IV.

Ayrshires.

Same premiums, with the exception that no third premiums will be awarded in this class. Judges same as Class 2.

—

CLASS V.

Alderneys.

Same as in Class 4.

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CLASS VI.

Herds of Shorthorns.

Committee—Col. J. Prince, Sandwich, C. W.; Geo. W. Rood, Lapeer; A. C. Harris, Toledo, O.; Geo. McKenzie, Dover; D. O. Woodruff, Niles.

For the best herd of Shorthorns, consisting of not less than five animals—one bull and four cows or heifers, each to be one year old or over—a silver cup of the value of.....$30 00

Devons and Herefords.

Committee—His Excellency Gov. Wisner; Cyrus Fuller, Plymouth; Wm. H. McHardy, Almont; Titus Dort, Dearborn; Oliver Burdick, Coldwater.

For best herd of Devons of the same number and description, a silver cup of the value of.....$20 00

For the best herd of Herefords of the same number and description, a silver cup of the value of..... 20 00

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NOTE.—No animal is debarred from competing in this class, because it has been entered in its specific class as an individual competitor.

The rule in relation to pedigree and condition for breeding purposes applies as fully in these classes as in any other.

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CLASS VII.

Cross of Blood Cattle.

Committee—H. O. Hanford, Plymouth; Fred. Fowler, Hillsdale; Lorenzo D. Hoard, Etna; Henry Warner, Dexter; J. D. Yerkes, Northville.

Best cow 4 years old or over, 1st prem.,	$12 00
2d best cow 4 years old or over, 2d prem.,	8 00
Best heifer 3 years old and under 5, 1st prem.,	10 00
2d best heifer 3 years old and under 5, 2d prem.,	6 00
Best heifer 2 years old, 1st prem.,	8 00
2d best heifer 2 years old, 2d prem.,	5 00
Best yearling heifer, 1st prem.,	6 00
2d best yearling heifer, 2d prem.,	4 00
Best heifer calf, 1st prem.,	5 00
2d best heifer calf, 2d prem.,	3 00

It shall be the duty of the committee to require that the exhibitor prove direct descent and purity of blood in both sire and dam of animals entered in this class for competition. A cross blood animal is not a grade. It is supposed to be an animal bred from full blood ancestors, but of different breeds. This breeding may run back, however; for instance: having a dam half Devon and half Durham, and a sire of the same breeding, would be a cross blood in the full meaning of the term. But the exhibitor should prove the descent, to the satisfaction of the committee.

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CLASS VIII.

Grades and Natives.

Committee—Benjamin Sacket, Redford; Jacob C. Lamb, Dryden; D. D. Powers, Hamburgh; Gideon Scott, Novi; Felch Reed, Springville.

Best native or grade cow 4 years old or over, 1st prem., ... $12 00
2d best native or grade cow 4 years old or over, 2d prem., ... 8 00
3d best native or grade cow 4 years old or over, 3d prem., ... 4 00
Best heifer 3 years old, 1st prem., ... 8 00
2d best heifer 3 years old, 2d prem., ... 6 00
3d best heifer 3 years old, 3d prem., ... 4 00
Best heifer 2 years old, 1st prem., ... 8 00
2d best heifer 2 years old, 2d prem., ... 5 00
Best yearling heifer, 1st prem., ... 6 00
2d best yearling heifer, 2d prem., ... 4 00
Best heifer calf, 1st prem., ... 4 00
2d best heifer calf, 2d prem., ... 3 00

In Classes 7 and 8, the Executive Committee do not esteem it to be for the interest of the State to encourage the breeding of grades or cross blood bulls, unless it can be shown that the cross for breeding purposes is a manifest and permanent improvement on the thoroughbreds.

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CLASS IX.

Working Oxen.

Committee—D. M. Fox, Lyons; E. M. DeForest, Ann Arbor; J. S. Tibbits, Plymouth; J. K. Kore, Hadley; Perez Lincoln, Coldwater.

Best yoke of working oxen over 4 years old, 1st prem., ... $15 00

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2d best yoke of working oxen over 4 years old, 2d prem., ...$12 00
3d best yoke of working oxen over 4 years old, 3d prem., ... 10 00
Best 5 yoke over 4 years old, from any one county in the United States or Canada, 1st prem.,..... 25 00
2d best 5 yoke over 4 years old, from any one county in the United States or Canada, 2d prem.,..... 15 00

A yoke of cattle competing in the 5 yoke class is debarred from competing for the single yoke premiums.

All cattle competing in this class must be tested by actual draught on the Fair ground, in loaded wagons, or otherwise, as the committee may direct.

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CLASS X.

Steers.

Committee—Same as for Class 9.

Best yoke of steers 4 years old, 1st prem.,.....$12 00
2d best yoke of steers 4 years old, 2d prem.,..... 8 00
Best yoke 3 years old, 1st prem.,..... 10 00
2d best yoke 3 years old, 2d prem.,..... 7 00
Best yoke of steers 2 years old, 1st prem.,..... 6 00
2d best yoke of steers 2 years old, 2d prem.,..... 4 00
Best yoke 1 year old, 1st prem.,..... 5 00
2d best yoke 1 year old, 2d prem.,..... 3 00
Best trained yoke of oxen or steers of any age, 1st prem., ... 10 00
2d best trained yoke of oxen or steers of any age, 2d prem.,..... 6 00

When cattle compete for the last named premium, the trainer should accompany them; and the time and method of training be certified in writing, and delivered to the chairman of the committee, and the certificate should accompany the report. Cattle competing for the training

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premium are not disqualified from competing in their appropriate classes.

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CLASS XI.

Fat Cattle.

Committee—Robert L. Rome, Ann Arbor; Geo. Clark, Jr., Lapeer; James Taylor, Kalamazoo; A. C. Day, Buchanan; A. A. Kinney, Medina.

Best fat ox, first premium,	$15 00
2d best fat ox, 2d premium,	10 00
Best fat cow, first premium,	15 00
2d best fat cow, 2d premium,	10 00
Best fat steer 3 years old first premium,	12 00
2d best fat steer 3 years old, 2d premium,	8 00
Best fat heifer 3 years, first premium,	12 00
2d best fat heifer 3 years, second premium,	8 00

Competitors for this premium must hand in written statements, properly verified, of the method of feeding, and the kind, quantity and cost of the food, of which the Committee will take charge, and which will guide them in making their award as the animal that has made the most pounds of flesh in the shortest time, on the least valuable of food, is considered to exhibit the most skill on the part of the breeder and feeder.

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CLASS XII.

Milch Cows.

Committee—Smith Farmer, Niles; William Tibbits, Coldwater; Daniel Todd, Adrian; J. W. McMillan, Eagle; J. W. Childs, Augusta.

Best milch cow, 1st premium,	$20 00
2d best milch cow, 2d "	10 00

The cow must be kept on grass only for fifteen days pre-

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vious to the terms of trial, and during the term. There shall be two periods of trial, at any time between the first of June and first of October, and there shall be at least forty days between the two periods.

Each term of trial shall last for ten consecutive days, and during that time a record shall be kept, showing the quantity of milk by weight, and the quantity of butter made from the milk. A statement of the same shall be furnished with the butter, as also a statement of the method of making it, the age of the cow, her breed and the time of calving. The statement to be verified to the entire satisfaction of the Committee. No premium will be awarded in any case, without such statement, as it is the desire of the Society to ascertain with as much precision as possible, correct data relative to the value of milch cows and their breeding.

—

The Fair of 1859 will be a sweepstakes Fair, foreign bred cattle being admitted to compete. No animal will be excluded on account of having drawn a first premium at previous fairs of this State.

DIVISION B.—HORSES.

CLASS I.

Horses for all Work.

Committee—Geo. D. Hill, Ann Arbor; Wm. H. Jennings, Rochester; James Peterson, Coldwater; P. Twombly, Detroit; Fred White, Buchanan.

Best stallion 4 years or over, 1st prem.,.....	$20 00
2d best stallion 4 years or over, 2d prem.,.....	12 00
3d " 4 " 3d "	8 00
Best stallion 3 years old, 1st prem.,.....	12 00
2d best stallion 3 years old, 2d prem.,.....	8 00

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Best stallion 2 years old, 1st prem.,	$10 00
2d best stallion, 2 years, 2d prem.,	6 00
Best stallion 1 year old, 1st prem.,	8 00
2d best stallion 1 year old, 2d prem.,	5 00
Best sucking colt, 1st prem.,	4 00
2d best sucking colt, 2d prem.,	3 00
Best brood mare 4 years old, with colt or colts not over 2 years, by her side,	15 00
2d best brood mare 4 years old, 2d prem.,	10 00
3d best brood mare 4 years old, 3d prem.,	8 00
Best 3 year old mare, 1st prem.,	10 00
2d best 3 year old mare, 2d prem.,	6 00
Best 2 year old filly, 1st prem.,	8 00
2d best 2 year old filly, 2d prem.,	5 00
Best 1 year old filly, 1st prem.,	6 00
2d best 1 year old filly, 2d prem.,	5 00
Best sucking filly, 1st prem.,	4 00
2d best sucking filly, 2d prem.,	3 00

The "horse of all work" should be not less than 15½ hands in height, quick, lively ears, broad between the eyes, round barrel, short loins, well up in the shoulder, deep chested, square quarters, flat legs, short between knee and pastern, hind legs well under him, speed equal to eight miles an hour on the road, and at least three miles at the plow; with sufficient blood to ensure spirit, style and endurance. As in this class it is evident the aged animals are intended for breeding, they should be sound; and as the young animals must be judged on their own merits, as well as their promise of future usefulness, they also must be sound, or else they cannot compete. The "horse of all work" is intended to be capable of being trained for the saddle, for harness, and to be able to go on the road or in draught, as he may chance to be broken. It may be that the horse of all work may, after a few years' training, make a useful, spirited, handsome family roadster, or he may be brought up to be a good draught horse, true to

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pull any load that is put behind him. Much depends on the use he is put to. Hence the judges will note that he is not to be judged by the speed he may make for a single mile. Hence, also, it will be noted that he may be thoroughbred or he may not, and for the same reason he must have size, action and spirit, as well as constitution, if he is worthy of a premium as a breeding animal.

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CLASS II.

Black Hawks and Morgans.

Committee—E. O. Humphrey, Kalamazoo; W. A. Hawkins, Ypsilanti; S. M. Seeley, Coldwater; Charles Ferguson, Almont; Abner Barnard, Adrian.

Best stallion 4 years old or over, 1st prem.,	$20 00
2d best stallion 4 years old or over, 2d prem.,	12 00
Best stallion 3 years old, 1st prem.,	15 00
2d best stallion 3 years old, 2d prem.,	8 00
Best stallion 2 years old, 1st prem.,	10 00
2d best stallion 2 years old, 2d prem.,	6 00
Best stallion 1 year old, 1st prem.,	8 00
2d best stallion 1 year old, 2d prem.,	6 00
Best sucking colt, 1st prem.,	4 00
2d best sucking colt, 2d prem.,	3 00
Best brood mare 4 years old or over, with colt or colts at her side,	15 00
2d best brood mare 4 years old or over, 2d prem.,	9 00
Best 3 year old filly, 1st prem.,	10 00
2d best 3 year old filly, 2d prem.,	7 00
Best 2 year old filly, 1st prem.,	8 00
2d best 2 year old filly, 2d prem.,	5 00
Best yearling filly, 1st prem.,	6 00
2d best yearling filly, 2d prem.,	4 00
Best sucking filly, 1st prem.,	4 00
2d best sucking filly,	3 00

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The owners of all animals competing in this list must be able to show to the satisfaction of the committee that they each possess a clean pedigree tracing back to Justice Morgan or Hill's Black Hawk, on the side of sire; and preference to be given to those that show Morgan or Black Hawk breeding on both sides, so far as pedigree is concerned. In trials of this family, speed and road action as well as form and style are considered as tests. Size is not a point, the original being only fourteen hands in height. Still, in a general view, all things else being considered equal, for breeding purposes, the principle being that the horse of size must also be the horse of superior stride, this point is not to be left out entirely.

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CLASS III.

Thoroughbred Horses.

Committee—Hon. C. E. Stuart, Kalamazoo; S. P. Brady, Detroit; W. S. H. Welton, Grand Rapids; Wm. Henderson, Novi; Harry Gould, Chicago.

Premiums same as "Horses of all Work."

The competitors who enter thoroughbred horses will note:

1st. That the judges will be required to reject any animal whose pedigree is not well authenticated, and which cannot be traced back without flaw on either side of sire or dam to well known English thoroughbred stock.

2d. Soundness, symmetry and size, as well as the utility of the animal for improving the stock of horses in this State, should be considered. The pedigree settles the question as to blood and breeding.

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CLASS IV.

Horses Partly Thoroughbred.

Committee—H. H. Emmons, Detroit; C. Beardsley, Pontiac; F. Larue, Lansing; J. H. Rodwell, Adrian; E. Vanvalkenburgh, Hillsdale.

Best stallion 4 years old or over, 1st prem.,	$20 00
2d best stallion 4 years old or over, 2d prem.,	10 00
Best stallion 3 years old,	15 00
" 2 years old,	10 00
" 1 year old,	8 00
Best sucking colt or filly,	5 00
Best mare 4 years, with colt at her side, 1st prem.,	15 00
2d best mare 4 years, with colt at her side, 2d prem.,	10 00
Best mare 3 years,	10 00
" 2 years,	8 00
" 1 year,	6 00

This class is established for the purpose of encouraging the breeding of high priced carriage horses in Michigan, and also to promote the infusion of the best class of blood into much of the work stock. Stock entered in this class shall not compete in any other. The owners of animals entering for competition must be able to show by authenticated pedigree, that they filed with the Secretary at the time of entry, that it is at least half bred, or that on one side it has a parent of acknowledged and well known thoroughbred stock, and such statement must be exhibited to the viewing committee. The committee will not only take into consideration in this class the breeding of the animal, but also its general utility for breeding purposes, and its quality with regard to the following points:—1. Size; 2 Symmetry; 3. Action; 4. Value as carriage stock.

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CLASS V.

Draught Horses.

Titus Dort, Dearborn; Peabody Cook, Niles; Thomas Clark, Lapeer; T. F. Gerls, Troy; A. Wales, Roseville, Macomb county.

Best stallion 4 years old or over, 1st prem.,	$20 00
2d best stallion 4 years old or over, 2d prem.,	10 00
Best stallion 3 years old, 1st prem.,	12 00
2d best stallion 3 years old, 2d prem.,	8 00
Best brood mare 4 years old or over, with colt or colts at her side not over 2 years, 1st prem.,	12 00
2d best brood mare 4 years or over, with colt or colts at her side not over 2 years, 2d prem.,	8 00
Best mare 3 years old, first prem.,	10 00
2d best mare 3 years old, 2d prem.,	7 00

These animals are intended for breeding purposes, and should be tested to draught, and reference should be had to the points that constitute a draught horse and a breeder at the same time. Great size and weight, combined with free action, is important. The perfect draught horse should stand low, on limbs somewhat heavy, but clean as possible, with great breadth of loin and buttock, flank well let down, and muscles connecting hind quarters with body full; the barrel round and deep; the back somewhat short and broad; the chest both deep and broad; the shoulders somewhat straight, and the withers of good height; the neck not too heavy and somewhat short; the head small in proportion to size of horse. Size should be close upon 16 hands and weight not less than 1,200 pounds. A leggy animal or draught is always to be considered defective, as a breeder especially.

Best stallion 2 years old, 1st prem.,	$8 00
2d best stallion 2 years old, 2d prem.,	6 00
Best stallion 1 year old, 1st prem.,	7 00

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2d best stallion 1 year old, 2d prem., ... $5 00
Best colt, suckling, ... 4 00
Best draught filly 2 years old, 1st prem., ... 7 00
2d best draught filly 2 years old, 2d prem., ... 5 00
Best draught filly 1 year old, 1st prem., ... 6 00
2d best draught filly, 1 year old, 2d premium, ... 4 00
Best suckling filly, ... 4 00
Best pair of draught horses, geldings or mares of any age, 1st prem., ... 12 00
2d best pair of draught horses, geldings or mares of any age, 2d prem., ... 10 00
Best single draught horse, or gelding, or mare, 1st prem., ... 6 00
2d best single draught horse, or gelding, or mare, 2d prem., ... 5 00

The Viewing Committee are to test all animals entered for the last four premiums, by actual draught.

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CLASS VI.

Trotting Horses.

Committee—M. E. Crofoot, Pontiac; K. C. Barker, Detroit; M. H. Hinsdale, Lyons; Dr. Hays, Marshall; F. V. Smith, Coldwater; Chas. A. Mack, Vicksburgh.

Best trotting stallion 5 years old or over, 1st prem., silver cup or $20 00
2d best trotting stallion 5 years old or over, second prem., ... 12 00
Best stallion 4 years old, 1st prem., ... 15 00
2d best stallion 4 years old, 2d prem., ... 10 00
Best stallion 3 years old, 1st prem., ... 12 00
2d best stallion 3 years old, 2d prem., ... 8 00
Best stallion 2 years old, 1st prem., ... 10 00
2d best stallion 2 years old, 2d prem., ... 6 00
Best stallion 1 year old, ... 7 00

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Best suckling colt,..... $5 00
Best brood mare 4 years old, with colts at her side, under 3 years, 1st prem.,..... 15 00
2d best brood mare 4 years old, with colts at her side, under 3 years, 2d prem., ... 10 00
Best mare 3 years old, 1st prem., ... 12 00
2d best mare 3 years old, 2d prem.,..... 8 00
Best mare 2 years old, 1st prem.,..... 10 00
2d best 2 years old, 2d prem.,..... 8 00
Best filly 1 year old,..... 6 00
Best suckling filly,..... ——
Best pair matched trotting horses, geldings, or mares, 4 years old or over, 1st prem., silver cup or 15 00
2d best pair of matched trotting horses, geldings, or mares, 4 years old or over, 2d prem., silver cup or..... 10 00
Best single trotting gelding or mare, 4 years old or over, 1st prem., silver cup or..... 10 00
2d best single trotting gelding or mare, 4 years old or over, 2d prem.,..... 6 00

The Committee will test all the animals entered in this class either by time or trial otherwise, under such rules as may be deemed necessary to preserve good order, and to determine the merits of competitors.

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CLASS VII.

Stable of Colts.

Committee—H. H. Norton, Howell; H. A. Tillotson, Marshall; J. M. Lamb, Lapeer; C. Baldwin, Rochester; J. W. Phillips, Romeo.

For the best stable of not less than 5 colts, from one sire, and different dams, to be exhibited with or without the sire,.....$25 00

For government of entries for this premium the Execu-

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tive Committee have established a rule that the term "colts," as used in this instance, shall mean all progeny of a stallion which have not reached the completion of their fourth year; the term "three years and under," meaning that a colt may be actually 3 years, 364 days, 23 hours and 59 minutes old, but he is not "four years old" till the next minute has passed.

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CLASS VIII.

Matched Horses.

Committee—W. S. Wilcox, Adrian; O. M. Martin, Ann Arbor; D. S. Hibbard, Jackson; C. A. Green, Troy; W. P. Mills, Grand Rapids.

Best pair matched carriage horses 4 years or over, 1st prem., ... $15 00
2d best pair matched carriage horses four years or over, 2d prem., ... 10 00
Best pair matched horses for all work 4 years or over, 1st prem., ... 15 00
2d best pair matched horses for all work 4 years or over, 2d prem., ... 10 00
Best pair matched horses for all work 3 years old, 1st prem., ... 10 00
2d best pair matched horses for all work 3 years old, 2d prem., ... 8 00
Best single carriage horse 4 years or over, 1st prem., ... 8 00
2d best single carriage horse 4 years or over, 2d prem., ... 6 00
Best single carriage horse 3 years old, 1st prem., ... 6 00
2d best single carriage horse 3 years old, 2d prem., 4 00
Best trained saddle horse, ... Diploma.

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CLASS IX.

Jacks and Mules.

Committee—Same as that for horses of all work.

For the best Maltese jack, proved to be a good stock getter, and which has been kept in this State 3 months previous to exhibition, said jack to be not less than 13 hands in height,.....$20 00

DIVISION C.—SHEEP, SWINE AND POULTRY.

CLASS I.

Spanish Merinos.

Committee—Geo. W. Lovel, Kalamazoo; Calvin Wheeler, Summit; Harvey Grey, Lapeer; Allen Crittenden, Ypsilanti; R. C. Rumsey, Brighton.

Best buck 3 years or over, 1st prem.,.....Dip. and	$5 00
2d best buck 3 years or over, 2d prem.,.....	5 00
Best buck 2 years old, 1st prem.,.....Dip. and	5 00
2d best buck 2 years old, 2d prem.,.....	5 00
Best buck 1 year old, 1st prem.,.....	4 00
2d best buck 1 year old, 2d prem.,.....	4 00
Best 5 buck lambs, 1st prem.,.....	4 00
2d best 5 buck lambs, 2d prem.,.....	3 00
Best 5 ewes, 3 years or over,.....	8 00
2d best 5 ewes 3 years or over, 2d prem.,.....	6 00
Best 5 ewes 2 years old, 1st prem.,.....	6 00
2d best 5 ewes 2 years old, 2d prem.,.....	5 00
Best 5 ewes 1 year old, 1st prem.,.....	6 00
2d best 5 ewes 1 year old, 2d prem.,.....	5 00
Best 5 ewe lambs, 1st prem.,.....	6 00
2d best 5 ewe lambs, 2d prem.,.....	5 00

All ewes 3 years old or over shall have reared a lamb during the year.

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CLASS II.

French Merinos.

Committee—A. L. Williams, Owosso; J. Starkweather, Ypsilanti; Fred Williams, Pontiac; —— Merrill, Berrien; John A. Rucker, Grosse Isle.

Same premiums as for Class 1.

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CLASS III.

Saxon and Silesian.

Committee—E. Arnold, Dexter; Gen. J. S. Goe, Brownsville, Pa.; Chas. Clark, Springfield, O.; Phineas White, Lapeer; Payne K. Leach, Utica.

Premiums same as for Class 1.

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CLASS IV.

Southdowns.

Committee—A. Wakeman, Hartland; Wm. Smith, Detroit; J. Olmstead, Lyons; Dr. J. Perkins, Springville; Howell Johnson, Plymouth.

Premiums same as Class 1.

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CLASS V.

Leicester and Cotswolds.

Committee—S. B. Brown, St. Clair; E. T. Bryan, Marshall; B. O. Williams, Owosso; B. Peckham, Parma; W. H. Miller, Moscow.

Premiums same as in Class 1.

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CLASS VI.

Fat Sheep.

Committee—Mark Flanigan, Detroit; Norman Allen, Parma; A. N. Kimmis, Novi; Samuel Howlett, Detroit; S. D. McDowell, Ann Arbor.

Best pen of five fat sheep, 1st prem.,..... $5 00
2d best pen of five fat sheep, 2d prem.,..... 3 00

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CLASS VII.

Swine.

Committee—S. P. Wormley, Marshall; Horace D. Rood, Lapeer; John Pridgeon, California; Rufus Thayer, Northville; David Whitman, Port Huron.

Best Essex boar 1 year old or over, 1st prem.,..... $5 00
2d best Essex boar, 1 year old or over, 2d prem.,.. 3 00
Best Essex breeding sow 1 year old or over, 1st prem., ... 5 00
2d best Essex breeding sow 1 year old or over, 2d prem., ... 3 00
Best lot of Essex pigs, not less than four in number, and not over ten months old,..... 5 00

Premiums to the same amount are offered for the same kinds of Suffolk Swine.

Premiums to the same amount are offered for the same kinds of pure Leicester Swine.

Premiums to the same amount are offered for the same kinds of Berkshire Swine.

Premiums to the same amount are offered for the same kinds of any other pure bred swine of breeds not enumerated; the committee to determine whether they are worthy of the encouragement of the Society.

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Grades and Cross Bred Swine.

For the best grade or cross bred boar 2 years old, 1st prem., ... $5 00
For the best grade or cross bred boar 1 year old, 1st prem., ... 3 00
For the best grade or cross bred breeding sow, two years old or over, ... 6 00
For the best grade or cross bred breeding sow, one year old, ... 3 00
For the best lot of grade or cross bred pigs not less than four in number, and not over 10 months old, 1st prem., ... 5 00
For the 2d best lot of grade or cross bred pigs not less than four in number and not over 10 months old, 2d prem., ... 3 00
For the best fat hog over 1 year old, ... 5 00
For the best fat pig less than 10 months old, ... 3 00

The Committee will note that there are some breeds not mentioned by name which are deserving of notice, if any individuals should be entered for premiums. Such are the Byfield, Chester and Grass Fed, all native varieties, and amongst the foreign are the Chinese, the Neapolitan, the large Yorkshires and the Lincoln. Should any of these be offered for premiums, the exhibitor must be able to prove purity of blood and directness of descent, or be content to enter amongst the grades and crosses.

In case an award is made to a single individual of a litter, and the litter is entered for premiums, there must be four in number without the one entered for a special premium, but the pig need not be ruled out of the litter otherwise, as the sow as a breeder is entitled to show the whole of her progeny, no matter what the number.

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CLASS VIII.

Poultry.

Committee—N. W. Quackenboss, Owosso; Peter Desnoyers, Detroit; —— Woodruff, Ann Arbor; A. A. Gardner, Northville; Francis Clark, Ypsilanti.

For the best lot of Asiatic Fowls, consisting of not less than two hens and one cock, 1st prem., ... $2 00
2d best do., 2d prem., ... 1 00
For the best lot of Malacca Game, consisting of not less than two hens and one cock, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
For the best lot of White Surry Dorkings, consisting of not less than two hens and one cock, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
For the best lot of colored Dorkings, consisting of not less than two hens and one cock, 1st prem., .. 2 00
2d best do., 2d prem., ... 1 00
For the best lot of Sumatra Pheasant, consisting of not less than two hens and one cock, 1st prem., .. 2 00
2d best do., 2d prem., ... 1 00
For the best lot of Chinese Pheasant, consisting of not less than two hens and one cock, 1st prem., .. 2 00
2d best do., 2d prem., ... 1 00
For the best lot of Bolton Greys, consisting of not less than two hens and one cock, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
For the best lot of Japan fowls, consisting of not less than two hens and one cock, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
For the best lot of Black Spanish, consisting of not less than two hens and one cock, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
For the best lot of Seabright Bantams, consisting of not less than two hens and one cock, 1st prem., .. 2 00
2d best do., 2d prem., ... 1 00

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For the best lot of White Bantams, consisting of not less than two hens and one cock, 1st prem., ... $2 00
2d best do., 2d prem., ... 1 00
Best lot of fowls shown by any breeder, taking into consideration number of varieties and quality of stock, 1st prem., ... 5 00
2d best do., 2d prem., ... 3 00
Best three domestic turkeys, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
Best pair of wild turkeys or half breeds, 1st prem., 2 00
2d best do., 2d prem., ... 1 00
Best pair of common geese, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
Best pair of Bremen geese, 1st prem., ... 3 00
2d best do., 2d prem., ... 2 00
Best pair of China geese or African geese, 1st prem., 2 00
2d best do., 2d prem., ... 1 00
Best pair of Muscovy ducks, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
Best pair of Aylesbury ducks, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
Best pair of common ducks, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
Best pair of Guinea fowls, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
Best pair of pea fowls, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
Best pair of fancy rabbits, 1st prem., ... 2 00
2d best do., 2d prem., ... 1 00
Best lot of domestic pigeons, and greatest varieties of breeds, 1st prem., ... 3 00
2d best do., 2d prem., ... 2 00

The Committee are at liberty to recommend for notice or premium any lot or variety of poultry which they may esteem valuable or ornamental, and for which no provision is made in the above list.

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DIVISION D.—FARM IMPLEMENTS.

CLASS I.

Implements for Cultivation of Land, Crops and General Spring Work.

Committee.—R. E. Trowbridge, Birmingham; H. S. Brooks, Novi; Reuben Slayton, Elba; E. C. Manchester, Battle Creek; C. K. Carpenter, Orion.

Plows.

Best plow for general use,..... .....Dip. and $3 00
Best plow for turning sod land, ...Dip. and 3 00
Best plow for turning under stubble,.....Dip. and 3 00
Best breaking up plow for heavy work,...Dip. and 3 00
Best one horse plow for cultivating corn or potatoes, 3 00
Best double mold-board plow for making drills or earthing up potatoes in drills or hills,..... 3 00
Best made double Michigan plow,.....Dip. and 3 00
Best plow for subsoiling,.....Dip. and 3 00
Best gang plow,.....Dip. and 3 00
Best side hill plow,..... 3 00
For the best drain or ditching plow adapted to be drawn with not over three yoke of cattle that will throw the earth out of a ditch not less than to the depth of thirty inches and a width of eight or ten inches at the bottom of ditch,.....Dip. and 20 00

Harrows.

For the best made harrows, adapted for general use,.....Dip. and 3 00
For the best circular, rotary or other peculiar invention adapted to do the work of the harrow in a superior manner,.....Dip. and 3 00
For the best wheel cultivator, adapted to the cultivation of fallows once plowed,..... 3 00
For the best cultivator adapted to work among corn with one horse,..... 3 00

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For the best cultivator for weeding and scarifying among root crops with one horse,.....$3 00
For the best made roller or clod crusher,..Dip. and 2 00

Seed Drills and Seed Sowers.

Eor the best two horse drill for sowing grain crops, Diploma and..... 5 00
For the best broadcast seed sower for grain, Dip. and 3 00
For the best grass and clover seed sower,.Dip. and 2 00
For the best corn or bean planter to work by horse power,.....Dip. and 5 00
For the best corn or bean planter to work by hand, Diploma and 3 00
For the best drill machine for sowing turnips, carrots, or beets by horse power, drill to sow more than one row, and rows to be not less than 18 inches apart,.....Dip. and 3 00
For the best drill for sowing seeds of root crops by hand, ...Dip. and 2 00

Hoes.

For the best half dozen of hoes,.....Dip. and 1 00
For best assortment of garden tools,.....Dip. and 10 00

The Executive Committee are desirous of encouraging the production of some machine or implement that can be used in cutting ditches at a cheap rate, especially on the low flat lands and marshy localities, which are frequent in this State; hence it will be seen they offer a premium for such an invention. The Viewing Committee, if such a machine is offered, will see that it is tested, and report upon it at such length as they may think necessary to explain its efficiency and its defects. The Committee will also be required to test, if possible, any new implement or article which may come in under this head, and which may not be enumerated in the above list.

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CLASS II.

Haying and Harvesting Implements and Machines.

Committee—J. E. Beebe, Jackson; Wm. Taft, Plymouth; H. H. Boyce, Hudson; Alexander Wattles, Troy; Brayton Flint, Novi.

Best mowing machine, two horses,	Dip. and	$10 00
2d best mowing machine, two horses,		5 00
Best moving machine, one horse,	Dip. and	10 00
Best scythes, half a dozen,		2 00
Best six snaths,		2 00
Best six hay rakes,		1 00
Best horse rake,		3 00
Best six hay forks,		1 00
Best machine for raking hay by horse power, Diploma and		3 00
Best machine or contrivance for unloading hay, Diploma and		5 00
Best corn cutter horse power,	Dip. and	5 00
Best six hand corn cutters,		1 00
Best contrivance for husking corn by horse or hand power,	Dip. and	3 00
For the best clover seed gatherer,		3 00
Best reaper,	Dip. and	10 00
Best combined reaper and mower,	Dip. and	10 00
Best six grain cradles,		2 00
Best machine to rake and gather grain into gavels after the reaper or cradler by horse power, Diploma and		5 00
Best hay rigging for double wagon,		3 00
Best hay rigging for an ox or double cart,		3 00
Best potato digger,		3 00
For any machine that will dig and gather potatoes by horse power in a method satisfactory to the Committee,	Dip. and	5 00

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CLASS III.

Apparatus and Machines connected with the Cleaning and Preparation of Crops for Market and the Feeding of Stock.

Commitee—F. M. Holloway, Hillsdale; Justice Gage, Dowagiac; William Morris, Burr Oak; M. L. Shultz, Ypsilanti; Geo. N. Bolles, Kalamazoo.

Best threshing machine, combined with horse power and separator,.....Dip. and $10 00
Best thresher and separator, fitted to work with any kind of horse power, ... 8 00
Best railroad horse power fitted to be attached to any machinery,.....Dip. and 6 00
Best circular or other horse power fitted to be attached to any machinery,.....Dip. and 6 00
Best fanning mill, or grain cleaner,.....Dip. and 4 00
Best straw and stalk cutter for horse power, Diploma and 5 00
Best corn sheller, horse power,.....Dip. and 3 00
Best corn sheller, hand power,.....Dip. and 2 00
Best hay and straw cutter, to be worked by horse power,..... ....Dip. and 3 00
Best root washer, ...Dip. and 3 00
Best root cutter, ...Dip. and 3 00
Best machine for pulping roots, that they may be mixed with cut straw, hay or chaff,.....Dip. and 5 00
Best and simplest contrivance for steaming food for cattle or hogs, not less than twenty head of each, Diploma and 10 00
Best corn and cob crusher,.....Dip. and 5 00
Best horse power mill for grinding meal or provender, ...Dip. and 5 00
Best contrived feeding rack for sheep,..... 3 00
Best plan for feeding swine,..... 3 00
Best plan for feeding calves by hand,..... 3 00
Best portable hay press,..... 3 00

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Best portable cider mill,..... $3 00
For the best portable steam engine, to be driven by means of Michigan coal, and to be used for agricultural purposes,.....Dip. and 20 00
For the best steam engine for agricultural purposes, stationary or portable, the portable to have preference; to be driven by wood,..... 10 00

All steam engines competing for premiums must be shown at work and their capacity to be moved from place to place, when entered as portable machines, should be tested. As the coal of this State is now being mined in several places, the Executive Committee desire to encourage such inventions as shall promote its useful consumption, and hence the large premiums offered for an engine that will consume coal readily. All the agricultural engines of Great Britain, whether portable or stationary, consume soft coal. There is no good reason why engines of a like character may not be used in this State; and the Executive Committee esteem it their duty to have such invention tried, and their economy tested.

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CLASS IV.

Barn Yard Articles, &c.

Committee—F. P. Currier, Almont; Jacob Pierce, South Charleston, O.; Moses Rogers, Ann Arbor; James Monroe, Albion; John Parker, Kalamazoo; Wm. T. Mitchell, Port Huron.

Best double farm wagon,..... $5 00
Best single farm wagon, ... 4 00
Best horse cart,..... 3 00
Best ox cart, ... 3 00
Best dray, ... 3 00
Best whiffletrees, ... 2 00
Best six clevices, ... 1 00

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Best wheelbarrow,	$2 00
Best hay or cattle scales, Dip. and	5 00
Best plow harness,	3 00
Best six grub hoes,	2 00
Best set draining or ditching tools,	5 00
Best hand machine for sawing wood,	3 00
Best lumber sleigh on bob-sleds,	5 00
Best lumber sleigh on runners,	3 00
Best six manure forks,	2 00
Best six shovels,	1 00
Best six spades,	1 00
Best six axes,	1 00
Best set of grain measures,	1 00
Best road scraper,	1 00
Best ox yoke,	2 00
Best wagon harness,	3 00
Best six bush hooks,	2 00
Best horse power wood saw,	5 00
Best cross cut saw, horse power,	3 00

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CLASS V.

Dairy and Household Articles.

Committee—A. C. Walker, Farmington; G. Ten Brook, Adrian; D. Felt, Bunker Hill; Wm. Beal, Rollin; G. W. Bullock, Saginaw.

Best churn for making butter, either rotary or other movement, Dip. and	$2 00
Best cheese press,	2 00
Best milk pans, not less than six,	1 00
Best milk strainer,	1 00
Best cheese vat for cheese making,	3 00
Best dozen brooms,	2 00
Best six mops and handles,	2 00
Best pump for cistern,	2 00

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Best set weights and scales for dairy use,..... 2 00
Best washing machine, ... 2 00
Best spinning wheel,..... 2 00
Best clothes horse, ... 1 00

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CLASS VI.

Miscellaneous.

Same Judges as Class 5.

Best sugar mill for crushing cane of sorghum,..... $5 00
Best apparatus for making sugar or molasses, ... 5 00

All farm machinery or implements not enumerated in the classes above mentioned will be entered under this head, and the Committee will report upon them to the Executive Committee, who will award to them adequate premiums.

DIVISION E.—DAIRY AND HOUSEHOLD MANUFACTURES.

CLASS I.

Butter and Cheese.

Committee—W. W. Murphy, Jonesville; Mrs. H. L. Andrews, Detroit; Mrs. E. F. Colby, Niles; Mrs. J. D. Yerkes, Northville; Mrs. D. M. Uhl, Ypsilanti.

For the best 15 pounds of butter, made in June, 1st prem,..... $5 00
For the 2d best 15 pouuds of butter, made in June, 2d prem.,..... 3 00
For the 3d best 15 pounds of butter, made in June, 3d prem.,..... 2 00
For the best 25 pounds of butter made at any time, 1st prem.,..... 5 00
For the 2d best 25 pounds of butter, made at any time, 2d prem.,..... 3 00

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For the 3d best 25 pounds of butter, made at any time, 3d prem., ... $2 00

The claimant for premiums must accompany his statement with answers to the following questions:

1. At what time was butter made, and from what number of cows?

2. What is the treatment of the cream and milk before churning, in winter and summer—and *why?*

3. What is the method of freezing the butter from the milk?

4. Do you use water in freezing the butter, or not—and *why?*

5. What quantity of salt per pound, and the kind of salt used?

6. Do you use saltpeter or any other substance in making the butter—and *why?*

7. Has any kind of salt been found injurious in making butter, if so state the kind, and reasons?

8. What is the manner of packing and preserving the butter?

Best cheese, one year old and over, not less than 25 pounds, 1st prem., ... $5 00
2d best cheese, one year old and over, not less than 25 pounds, 2d prem., ... 4 00
3d best cheese, one year old and over, not less than 25 pounds, 3d prem., ... 2 00
Best new cheese, 1st prem., ... 5 00
2d best new cheese, 2d prem., ... 3 00
3d best new cheese, 3d prem., ... 2 00

Those who present cheese for the premiums offered, are desired to give the age of the cheese exhibited, and to answer in detail the following questions:

1. Do you warm all the milk at all seasons of the year, or not—and *why?*

2. At what degree of heat do you set or add rennet—and *why?*

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3 Do you vary the heat at setting at different seasons of the year—and *why?*

4. What kind of rennet do you use; how prepared; by what rule do you judge of the proper time to commence breaking the curd—and *why?*

5. How do you break and make the curd fine—and *why?*

6. Do you observe a rule as to the time occupied in breaking the curd—and *what is it?*

7. Do you observe a rule as to the age of the curd when you begin to heat up the scald, and the time occupied in raising the heat—and *why?*

8. How do you apply heat in scalding; what degree is used, and how long kept applied to the curd to cook it enough?

8. Do you vary your rule in scalding at different seasons in the year—and *why?*

10. How do you determine when curd is scalded enough?

11. How do you separate the whey and curd, and what rule have you for tempering the curd for receiving the salt?

12. What kind of salt used; how much, and how do you apply it, and at what particular state of the curd?

13. How soon after applying the salt do you put the curd to press; warm or cold—and *why?*

14. What power do you press with, and how long?

15. What is the cause of the pressing cloth adhering to the cheese, and what is your remedy?

16. How do you give coloring to the cheese, inside or outside?

17. How do you produce a rind impervious to flies?

18. What kind of oil or dressing is used upon your cheese, and how is it applied?

19. What is the cause of cheese swelling, and what is a remedy?

20. Do you use the thermometer to test the degree of heat?

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CLASS II.

Sugar, Honey and Beehives.

Same Committee as Class 1.

For the best sample of sugar, not less than ten lbs., made from the sorghum, to be shown at the Fair or sent to the Executive Committee at its annual meeting, with an explicit statement of its manufacture, in writing,.....$10 00

For the best three gallons of molasses made from the sorghum or imphee, to be shown at the Fair or exhibited to the Executive Committee at its annual meeting, with an explicit statement of its manufacture, in writing,.... ..... 4 00

For the best ten pounds of maple sugar,..... 2 00

For the best specimens of honey in boxes or jars,. 2 00

For the best beehives, and method of securing honey and taking care of bees,.....Dip. and 5 00

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CLASS III.

Bread, Preserves, Pickles.

Committee—Mrs. L. B. Adams, Detroit; Mr. J. Dillingham, Howell; Mrs. M. M. Merrill, Ann Arbor; Mrs. E. H. Thompson, Flint; Mrs. T. McClumphia, Plymouth; Mrs. J. E. Kitton, St. Clair.

For the best three loaves of bakers' bread, Dip. and $3 00

For the 2d best three loaves of bakers' bread,..... 2 00

Best three loaves of milk or salt rising bread, first prem.,..... 3 00

2d best three loaves of milk or salt rising bread, 2d prem.,..... 2 00

Best yeast bread, three loaves, 1st prem.,..... 3 00

2d best yeast bread, three loaves, 2d prem.,..... 2 00

Best soda rising, 1st prem., ... 3 00

2d best soda rising, 2d prem.,..... 2 00

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Best corn bread, 1st prem.,..... $2 00
2d best corn bread, 2d prem., ... 1 00
Best brown bread, or rye and Indian, three loaves, 1st prem.,..... 3 00
2d best brown bread, or rye and Indian, 3 loaves,.. 2 00
Best samples of flour bread made by a girl of 16 or under,..... 3 00
Best sample brown bread made by a girl of 16 or under, ... 3 00
Best specimen of pickled vegetables, including cucumbers, onions, cabbage, tomatoes, beans, with statement of process used in making them,..... 2 00
Best specimen of currant jelly, with statement of process,..... 2 00
Best specimen of preserved small fruits, with sugar, process of manufacture to be furnished Committee,..... 2 00
Best specimen of preserved large fruit that has been kept a year or over, with statement of method,..... 3 00
Best specimen of tomato ketchup or sauce, with statement of method of making,..... 2 00
Best specimen of mushroom ketchup, with statement of method of making,..... 2 00
Best specimen of fruit wine, home made, 1st prem., 2 00
2d best " " " 2d prem., 1 00
Best specimen of pure cider vinegar, not less than one gallon, home made, 1st premium,..... 2 00
2d best specimen of pure cider vinegar, not less than one gallon, home made, 2d prem.,..... 1 00

The Executive Committee esteem it of the utmost importance to encourage the arts which promote comfort in the household, and have extended the list for this year. There may be many articles entered under this class, which are not enumerated. Such articles as may be deemed meri-

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torious, the Committee are instructed to report upon, and to make such awards as may seem just.

DIVISION F.—DOMESTIC MANUFACTURES.

CLASS I.

Home Made.

Committee—Joseph R. Ward, Battle Creek; Mrs. John Thomas, Oxford; Mrs. H. P. Sly, Plymouth; Mrs. C. W. Green, Farmington; Mrs. W. S. Wilcox, Adrian.

Best pair woolen blankets, 1st prem.,	$4 00
2d best pair woolen blankets, 2d prem.,	3 00
3d best pair woolen blankets, 3d prem.,	2 00
Best ten yards woolen cloth, 1st prem.,	4 00
2d best ten yards woolen cloth, 2d prem.,	3 00
3d best ten yards woolen cloth, 3d prem.,	2 00
Best ten yards woolen flannel, 1st prem.,	4 00
2d best ten yards woolen flannel, 2d prem.,	3 00
3d best ten yards woolen flannel, 3d prem.,	2 00
Best ten yards woolen carpet, 1st prem.,	4 00
2d best ten yards woolen carpet, 2d prem.,	3 00
3d best ten yards woolen carpet, 3d prem.,	2 00
Best hearth rug, 1st prem.,	3 00
2d best hearth rug, 2d premium,	2 00
Best rag carpet, ten yards, 1st prem.,	3 00
2d best rag carpet, ten yards, 2d prem.,	2 00
3d best rag carpet, ten yards, 3d prem.,	1 00
Best woolen coverlet, 1st prem.,	3 00
2d best woolen coverlet, 2d prem.,	2 00
3d best woolen coverlet, 3d prem.,	1 00
Best piece satinet, ten yards, 1st prem.,	2 00
2d best piece satinet, ten yards, 2d prem.,	1 00
Best woolen shawl, 1st prem.,	3 00
2d best woolen shawl, 2d prem.,	2 00
Best pair woolen stockings, 1st prem.,	2 00

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2d best pair woolen stockings, 2d prem.,	$1 00
Best pair woolen mittens, 1st prem.,	2 00
2d best pair woolen mittens, 2d prem.,	1 00
Best pair mittens knit by girl under 14 years, 1st prem.,	2 00
2d best pair mittens knit by girl under 14 years, 2d prem.,	1 00
Best stocking yarn, two lbs.,	2 00
Best stocking yarn, spun by girl under 14 years,	2 00
Best white bed spread, 1st prem.,	3 00
2d best white bed spread, 2d prem.,	2 00
3d best white bed spread, 3d prem.,	1 00
Best and handsomest patch work quilt, 1st prem.,	3 00
2d best and handsomest patch work quilt, 2d prem.,	2 00
Best ten yards of diaper, 1st prem.,	4 00
2d best ten yards of diaper, 2d prem.,	2 00
Best ten yards tow cloth, 1st prem.,	3 00
2d best ten yards tow cloth, 2d prem.,	2 00
3d best ten yards tow cloth, 3d prem.,	1 00
Best cotton knit stockings, 1st prem.,	2 00
2d best cotton knit stockings, 2d prem.,	1 00
Best linen thread, one lb.,	1 00
For the best and greatest variety of articles manufactured by any one family, and exhibited, but not containing any article entered separately for single premium,	10 00

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CLASS II.

Factory Made.

Committee—Colin Campbell, Detroit; John Thomas, Oxford; Geo. W. Murray, Marshall; H. Griswold, Lapeer; Henry Doty, Detroit; S. L. Smith, Algonac.

For the best piece of black broadcloth, manufactured in or out of the State, ... Dip. and $3 00

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For the greatest and best display of woolen manufactured goods,.....Dip. and $5 00
For the best display of woolen goods manufactured in Michigan,.....Silver Medal and 5 00
For the 2d best display of woolen goods manufactured in Michigan, ...Dip. and 3 00
For the best display of cotton and silk goods, manufactured in or out of the State, ...Dip. and 5 00
For the best display of cotton goods manufactured in Michigan,.....Silver Medal and 5 00
For the best and handsomest display of carpets, Diploma and..... 5 00
For the best and handsomest five hearth rugs,...Diploma.
For the five best and handsomest fancy door mats, Diploma.
For the finest display of window curtains,.Dip. and 3 00
For the best and finest window blinds,.....Diploma.
For the best display of oil cloths,.....Diploma.
For the best white woolen blankets,.....Dip. and 2 00
For the best two Marseilles quilts,.....Diploma.
For the best woolen manufactured coverlet, 1st prem., ... 2 00
For the 2d best woolen manufactured coverlet, 2d prem., ... 1 00
For the best display of paper hangings,.....Diploma.

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CLASS III.

Articles of Furniture.

Committee—Walter Fish, Jackson; J. R. Nichols, Detroit; J. F. Pratt, Coldwater; T. H. Dewey, Lyons; W. B. Hewitt, Ypsilanti.

For the best set of chamber furniture,....Dip. and $5 00
For the best and handsomest bureau,.....Diploma.
For the best sofa, lounge or couch,. .....Diploma.
For the best office desk, ... 5 00

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For the best display of parlor or drawing room furniture, ...Dip. and $5 00
For the best easy chair,..... 2 00
For the best book case,..... 2 00
For the best extension table,..... 2 00

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CLASS IV.

Articles of Dress.

Same committee as Class 3.

For the best suit of men's clothes, including coat, vest, and pantaloons,.....Dip. and $5 00
For the best made overcoat,.....Diploma.
For the best made dress coat,.....Diploma.
For the best made frock coat,.....Diploma.
For the best three undershirts and drawers of flannel, ... 2 00
For the best three undershirts and drawers of cotton, ... 2 00
For the best three undershirts and drawers of silks, 2 00
For the best made shirts, 5 in number,....Dip. and 2 00
For the best silk hats, 2 in number,.....Dip. and 2 00
For the best fur hats, 2 in number,.....Dip. and 2 00
For the best soft hats, half a dozen,.....Diploma.
For the best straw hats, ...Diploma.
For the best boys' caps,.....Diploma.
For the best display of gloves, ...Diploma.
For the best display of millinery goods,...Dip. and 5 00

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CLASS V.

Articles of Leather and India Rubber.

Committee—E. M. Herrington, Coldwater; F. E. Eldred, Detroit; Thomas Cumming, Niles; Henry Brown, Detroit; —— Rich, Ypsilanti.

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Best traveling trunk,	$1 00
Best carpet bag,	1 00
Best ladies' satchel,	1 00
Best pair gents' summer boots,	2 00
Best pair gents' winter boots,	2 00
Best pair cow hide boots,	2 00
Best pair ladies' summer walking shoes,	1 00
Best pair ladies' winter shoes,	1 00
Bair pair gents' slippers,	1 00
Best pair ladies' slippers,	1 00
Best carriage harness, double,	3 00
Best single or buggy harness,	3 00
Best sole leather,	2 00
Best upper leather,	2 00
Best calf skin,	2 00
Best other kinds,	2 00
Best morocco leather,	2 00
Best gents' riding saddle,	3 00
Best ladies' riding saddle,	3 00
Best horse collar,	2 00
Best hames,	2 00
Best enamel leather,	2 00
Best assortment of India rubber goods, . . . Dip. and	5 00

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CLASS VI.

Carriages and Buggies.

Committee.—John Patton, Detroit; J. G. Roberts, Tecumseh; Burt Etheredge, Coldwater; Lyman Baldwin, Detroit; Elijah Murray, Niles.

Best two horse family carriage, . . . Silver Medal and	$4 00
Best one horse carriage,	3 00
Best top buggy,	3 00
Best buggy without top,	3 00
Best trotting wagon,	3 00
Best farm wagon, all purposes,	3 00

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Best spring wagon for market,..... $3 00
Best and greatest variety of carriages, buggies, &c.,
Diploma and 10 00
Best omnibus,.....Dip. and 3 00
Best railroad car, ...Silver Medal.

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CLASS VII.

Stoves and Hollow Ware, &c.

Committee.—J. R. Monroe, Paw Paw; H. Pennoyer, Nunica; Alonzo Sessions, Ionia; W. P. Mills, Grand Rapids; A. D. Power, Farmington.

Best cooking stove for wood fire,.....Silver Medal.
Best cooking stove for coal fire,.....Diploma.
Best parlor stove,..... .....Diploma.
Best apparatus for cooking range,.....Diploma.
Best ornamental cast iron vase, on pedestal,....Diploma.
Best cast iron gate,.....Diploma.
Best cast iron fence,.....Diploma.
Best church bell, ...Diploma.
Best steamboat bell,.....Diploma.
Best locomotive bell, ...Diploma.
Best hotel signal, ...Diploma.
Best lot of brass work,.....Diploma.
Best ornamental fountain,.....Diploma.
Best parlor gate,.....Diploma.
Best casting for fire front,.....Diploma.
Best sample hollow ware,.....Diploma.
Best ornamental statuary,.....Diploma.
Best iron chair,.....Diploma.
Best fruit and flower stands,.....Diploma.
Best display of rustic work,.....Diploma.
Best furnace or other apparatus for warming houses, economy of construction, and consumption of fuel, and security to premises, and facility of ventilation, to be taken into consideration,.....Silver Medal.

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Miscellaneous.

In this class there are usually a large number of articles presented which it is not possible to classify, or which may not be named in the above lists. In all cases such entries will be placed under their appropriate heads, or they will be entered under the heading of Miscellaneous Manufactures, and a Special Committee will be appointed for their examination.

DIVISION G.—FINE ARTS, NEEDLEWORK, &c.

CLASS I.

Paintings, Statuary, Musicial Instruments, &c.

Committee—Robt. E. Roberts, Detroit; Wm. M. Fenton, Flint; Miss H. K. Clapp, Lansing,; Mrs. H. E. Degarmo, Lyons; H. C. Lewis, Coldwater.

Best collection of oil paintings shown by a resident of Michigan,.....Dip. and	$5 00
2d best collection of oil paintings shown by a resident of Michigan,.....	3 00
Best painting in oil, by a Michigan artist,.....	5 00
Best animal portrait by a Michigan artist, 1st prem.,	5 00
2d best animal portrait by a Michigan artist, 2d prem.,.....	3 00
Best original water color drawing, 1st prem.,.....	3 00
2d best original water color drawing, 2d prem.,....	1 00
Best collection of Daguerreotypes, Ambrotypes or Mezzographs,.....Dip. and	5 00
2d best collection Daguerreotypes, Ambrotypes or Mezzographs, ...	3 00
Best design for farm houses and buildings, with description, estimates, &c., ...Dip. and	10 00
Best collection of statuary,.....Dip. and	5 00
2d best collection of statuary,.....	3 00

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Best pencil drawing sketch of the Society's Fair ground,.....Dip. and $4 00
Best and largest photograph of the Fair ground, Diploma and..... 4 00
Best Photograph, or sun picture of any kind, of any animal shown at the Fair of 1858,.....Dip. and 3 00

[The entries for the two last named premiums need not be made until Thursday at 12 o'clock. The specimens will then be placed in a conspicuous place in the hall of Fine Arts.]

Best specimen of ornamental penmanship,.....Diploma.
Best specimen of ornamental printing by a Michigan printer,.....Diploma.
Best specimen of book binding,.....Diploma.
Best specimen of sign painting,.....Diploma.

Musical Instruments.

Best grand piano for concert use,.....Dip. and $5 00
Best parlor piano, either grand, cabinet or square, Dip. and..... 5 00
Best parlor organ,.....Dip. and 5 00
Best melodeon,.....Dip. and 3 00
Best assortment of musical instruments for an orchestra,.....Diploma.
Best assortment of musical instruments for a band, Diploma.

Sewing Machines.

Best and most elegant specimens of sewing machines,.....Dip. and $3 00
Best and cheapest family sewing machine,.Dip. and 2 00

Clocks, Jewelry, &c.

Best exhibition of clocks for household use or parlor ornament,.....Dip. and $5 00
Best exhibition of silver or plated ware,..Dip. and 5 00
Best set of mathematical instruments,.....Diploma.
Best exhibition of table cutlery,.....Diploma.

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Best barometer,.....Diploma.
Best thermometer for all uses,.....Diploma.

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CLASS II.

Needle, Shell, Wax and other Fancy Work.

Committee—Mrs. H. Webster, Detroit; O. B. Wilcox, Detroit; Mrs. C. A. Mack, Vicksburgh; Mrs. W. T. Mitchell, Port Huron; Mrs. John Starkweather, Ypsilanti.

Best specimen of ornamental needle work,.	Dip. and	$2 00
2d best specimen of ornamental needle work,.....		1 00
Best silk embroidery of any kind,.....	Dip. and	2 00
2d best silk embroidery of any kind,.....		1 00
Best worked table cover,.....	Dip. and	2 00
2d best worked table cover,.....		1 00
Best ottoman,.....	Dip. and	2 00
2d best ottoman,.....		1 00
Best specimen of crochet shawl,.....	Dip. and	2 00
2d best specimen of crochet shawl,.....		1 00
Best crochet chair cover,.....	Dip. and	2 00
2d best crochet chair cover,.....		1 00
Best knit hood,.....	Dip. and	2 00
2d best knit hood,.....		1 00
Best worked lamp mats,.....	Dip. and	2 00
2d best lamp mats,.....		1 00
Best specimen of worsted work,.....	Dip. and	2 00
2d best specimen of worsted work,.....		1 00
Best specimen lace embroidery,.....	Dip. and	2 00
2d best specimen lace embroidery,.....		1 00
Best specimen of hair work,.....	Dip. and	2 00
2d best specimen of hair work,.....		1 00
Best specimen of wax work,.....	Dip. and	2 00
2d best specimen of wax work,.....		1 00
Best group of wax flowers,.....	Dip. and	2 00
2d best group of wax flowers,.....		1 00

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Best specimen of papier mache work,.....Dip. and $2 00
2d best specimen of papier mache work,..... 1 00
Best specimen of leather work,.....Dip. and 2 00
2d best specimen of leather work,..... 1 00
Best specimen of plain sewing, by a girl under fifteen years of age,.....Dip. and 6 00
2d best specimen of plain sewing by a girl under fifteen years of age,..... 2 00
3d best specimen of plain sewing by a girl under fifteen years of age,..... 1 00
For the neatest darned stocking,.....Dip. and 2 00
For the 2d neatest darned stocking,..... 1 00
Best and neatest mended glove,.....Dip. and 1 00

DIVISION H.

CLASS I.—FLOWERS.

Committee—Bela Hubbard, Detroit; Mrs. Wisner, Pontiac; Miss C. M. Shipman, Ypsilanti; Mrs. B. Follett, Ypsilanti; Mr. J. Brown, Battle Creek.

Professional List.—Greenhouse Plants.

Best twenty greenhouse plants, either of different genera and species, or of new varieties, their rarity, beauty of growth, and quality of bloom to be taken into consideration, 1st prem.,..... $5 00
For the 2d best do., 2d prem.,..... 3 00
Best ten greenhouse plants, to be of different species, 1st prem.,..... 4 00
2d best ten greenhouse plants, to be of different species,..... 2 00

Cut Flowers.

Best and greatest variety of flowers skillfully grouped, 1st prem.,..... $3 00
2d best greatest variety of flowers skillfully grouped, 2d prem.,..... 2 00

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Best and greatest variety of roses,.....	$3 00
" and greatest variety of dahlias,.....	3 00
" twelve dissimilar blooms of the dahlia,.....	2 00
" collection and display of German asters,.....	2 00
" and greatest variety of phloxes,.....	3 00
" seedling phlox,.....	2 00
" and greatest variety of the verbena,.....	2 00
" seedling verbena,.....	2 00
" and greatest variety of hardy annual flowering plants in bloom, to be named and shown either in pots or as cut flowers,.....	3 00
Best floral design, 1st prem.,.....	2 00
2d best floral design, 2d prem.,.....	1 00
Best bouquet, round,.....	1 00
Best basket of flowers, most tastefully arranged, 1st prem., ...	2 00
2d best basket of flowers, most tastefully arranged, 2d prem.,.....	1 00
Best flat bouquet,.....	1 00

AMATEUR LIST.—CLASS II.

Committee and premiums same as Class 1.

FRUITS.—AMATEUR LIST.

CLASS III.

Apples.

Committee—H. F. Baker, Lyons; Elijah Leland, Quincy; E. H. Thompson, Flint; Linus Cone, Troy; W. L. Woodbridge, Detroit.

Best and greatest number of choice varieties of apples, named and labeled, three specimen to be shown of each—all to have been grown by the exhibitor, 1st prem.,.....	$5 00

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2d best and greatest number of choice varieties of apples, named and labeled, three specimens to be shown of each—all to have been grown by the exhibitor, 2d prem., ... $3 00

For the same best exhibit of summer apples, 1st prem., ... 4 00

For the same 2d best exhibit of summer apples, 2d prem., ... 2 00

For the same best exhibit of autumn apples, 1st prem., ... 4 00

For the same 2d best exhibit of autumn apples, 2d prem., ... 2 00

For the same best exhibit of winter apples, 1st prem., 4 00

For the same 2d best exhibit of winter apples, 2d prem., ... 2 00

Best 12 specimens of any single variety of summer apples, 1st prem., ... 2 00

2d best 12 specimens of any single variety of summer apples, 2d prem., ... 1 00

Best 12 specimens of any single variety of autumn apples, 1st prem., ... 2 00

2d best 12 specimens of any single variety of autumn apples, 2d prem., ... 1 00

Best 12 specimens of any single variety of winter apples, 1st prem., ... 2 00

2d best 12 specimens of any single variety of winter apples, 2d prem., ... 1 00

Best seedling summer apples, of which 5 well grown specimens shall be shown, ... Downing's Fruit Book.

Best seedling autumn apples, of which 5 well grown specimens shall be shown, . Downing's Landscape Gard'g.

Best seedling winter apples, of which 5 well grown specimens shall be shown, . . Darlington's Amer. Weeds.

Best and greatest variety of well grown table apples, three of each variety to be shown, 1st premium, ... Barry's Fruit Garden.

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2d best and greatest variety of well grown table apples, three of each variety to be shown, second premium,.....Field's Pear Culture.

The professional list includes nurserymen, orchardists and others, who make it their business to cultivate and sell fruit trees.

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CLASS III.

Pears.

Committee—Rev. M. L. Hunter, Grosse Isle; Wm. Adair, Detroit; J. J. Dougall, Windsor; T. T. Thomas, Summit; B. Hathaway, Little Prairie Ronde.

Best and greatest variety of pears, named and labeled, and grown by exhibitor, 1st prem.,.....	$5 00
2d best and greatest variety of pears, named and labeled, and grown by exhibitor, 2d prem.,.....	3 00
Best collection of autumn pears, named and labeled, and grown by exhibitor, 1st prem.,.....	3 00
2d best collection of autumn pears, named and labeled, and grown by exhibitor,.....	2 00
Best seedling pears of any kind, specimens to be accompanied with its history, origin, and such other information as may be useful to characterize the fruit,.....	3 00
Best six specimens of well grown autumn pears, named and labeled, grown by exhibitor,.....	1 00
For the same exhibition of winter pears,.....	1 00

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CLASS IV.

Peaches, Plums and other Fruits.

Committee—S. O. Knapp, Jackson; John Ford, Detroit; D. Cook, Jackson; P. Barry, Rochester, N. Y.; A. C. Baldwin, Pontiac.

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Peaches.

Best and greatest variety of peaches, grown by exhibitor, three of each variety to be shown, named and labeled correctly, 1st prem.,	$5 00
2d best and greatest variety of peaches, grown by exhibitor, 3 of each variety to be shown, named and labeled correctly, 2d prem.,	3 00
Best six varieties, three of each to be shown, correctly named and labeled, 1st prem.,	3 00
2d best six varieties, three of each to be shown, correctly named and labeled, 2d prem.,	2 00

Plums.

Best collection of plums, six specimens each,	3 00
Best four variety of plums,	2 00
Best twelve plums, choice varieties, 1st prem.,	2 00
2d best twelve plums, choice varieties, 2d prem.,	1 00
Best seedling plum, with description, &c.,	2 00

Quinces.

Best twelve quinces of any good variety, 1st prem.,	3 00
2d best twelve quinces of any good variety, second prem.,	2 00
3d best twelve quinces of any good variety, third prem.,	1 00

Grapes.

Best and most extensive collection of native grapes, grown in the open air, 1st prem.,	3 00
2d best and most extensive collection of native grapes, grown in the open air, 2d prem.,	2 00
Best and most extensive collection of foreign grapes, grown in the open air, 1st prem.,	3 00
2d best and most extensive collection of foreign grapes, grown in the open air, 2d prem.,	2 00
Best and most extensive collection of foreign grapes, grown under glass, 1st prem.,	3 00

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2d best and most extensive collection of foreign grapes, grown under glass, 2d prem.,..... $2 00
Best seedling grape, with a history of its origin,... 1 00

Watermelons.

Best two specimens of any variety, 1st prem.,..... $2 00
2d best two specimens of any variety, 2d prem.,... 1 00

Muskmelons.

Best two specimens of any variety, 1st prem.,..... $2 00
2d best two specimens of any variety, 2d prem.,... 1 00

Nutmeg Melons.

Best four specimens, 1st prem.,..... $2 00
2d best four specimens, 2d prem.,..... 1 00

FRUITS.—PROFESSIONAL LIST.

CLASS V.

Apples.

Committee—G. V. N. Lothrop, Detroit; H. D. Lay, Ypsilanti; H. C. Gilbert, Coldwater; Walter Wright, Adrian; A. C. Hubbard, Detroit,

Best and greatest variety good winter apples, three of each variety, named and labeled, grown by exhibitor, 1st prem.,.....Dip. and $3 00
2d best and greatest variety good winter apples, 3 of each variety, named and labeled, grown by exhibitor, 2d prem.,..... 2 00
3d best and greatest variety good winter apples, 3 of each variety, named and labeled, grown by exhibitor, 3d prem.,..... 1 00
Best autumn apples, same as above, 1st prem., Diploma and..... 3 00
2d best autumn apples, same as above, 2d prem.,.. 2 00
3d best autumn apples, same as above, 3d prem.,.. 1 00
Best summer apples, same as above, 1st prem.,.... 3 00

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2d best summer apples, same as above, 2d prem.,.. $2 00
3d best summer apples, same as above, 3d prem.,.. 1 00
Best twelve specimens of winter apples, single variety, 1st prem.,.....Dip. and 2 00
2d best twelve specimens of winter apples, single variety, 2d prem.,..... 2 00
3d best twelve specimens of winter apples, single variety, 3d prem.,..... 1 00
Best twelve specimens of autumn apples, single variety, 1st prem.,.....Dip. and 2 00
2d best twelve specimens of autumn apples, single variety, 2d prem.,..... 2 00
3d best twelve specimens autumn apples, single variety, 3d prem.,..... 1 00
Best twelve specimens of summer apples, single variety, 1st prem.,.....Dip. and 2 00
2d best twelve specimens of summer apples, single variety, 2d prem.,..... 2 00
3d best twelve specimens of summer apples, single variety, 3d prem.,..... 1 00
Best seedling winter apples, 1st prem.,....Dip. and 2 00
2d best seedling winter apples, 2d prem.,..... 2 00
3d best seedling winter apples, 3d prem.,..... 2 00

[Three specimens of each of the last named to be exhibited, with description, history of origin, &c.]

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CLASS VI.

Pears.

Committee same as upon amateur list.

Best and greatest variety of good pears, named and labeled, grown by exhibitor, 1st prem.,..... $4 00
2d best and greatest variety of good pears, named and labeled, grown by exhibitor, 2d prem.,..... 3 00
3d best and greatest variety of good pears, named and labeled, grown by exhibitor, 3d prem.,..... 2 00

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Best collection autumn pears (as above,)..Landscape, Gardening and Architecture.

2d best collection autumn pears,.....Horticulturist.

Best seedling autumn pear, not less than six specimens, with description, &c.,	$3 00
Best six specimens autumn pears, 1st prem.,	3 00
2d best six specimens autumn pears, 2d prem.,	2 00
3d best specimens autumn pears,	1 00
Best seedling pear with description and history,	3 00

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CLASS VII.

Peaches, Plums and other Fruits.

Premiums and judges the same as upon amateur list.

Regulations for the Horticultural Department.

1. All fruits, flowers, plants and vegetables offered in competition for premiums, must be grown by the competitor.

2. Articles receiving a premium in one class, cannot compete in another.

3. Judges may withhold premiums when articles of sufficient merit are not offered.

4. Articles once placed on the table are under the control of the Judges, and cannot be removed until the close of the Exhibition.

5. Where fruits are not correctly named, the superintendent and chairman of the fruit committee will have power to correct and re-name.

6. Exhibitors must present lists of the fruit exhibited to the fruit committee, with the names of each variety and the number of specimens shown.

7. The summer, autumn and winter fruits must be kept in separate groups when placed on the tables.

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CLASS VIII.

Vegetables.

Committee—George Crabb, Detroit; J. M. Hoag, Plymouth; Jeremiah Brown, Battle Creek; John Dillingham, Howell; John Clayton, Ypsilanti.

Best and greatest variety of roots for cattle, 1st prem.,	$4 00
2d best and greatest variety of roots for cattle, 2d prem.,	2 00
Best and greatest variety culinary vegetables, raised by exhibitor, 1st prem.,	4 00
2d best and greatest variety culinary vegetables, raised by exhibitor, 2d prem.,	2 00
Best twelve blood beets,	2 00
" twelve turnip rooted beets,	2 00
" six heads cauliflower,	2 00
" six heads cabbage,	2 00
" twelve carrots,	2 00
" twelve parsnips,	2 00
" twelve stalks of celery,	2 00
" six vegetable eggs,	2 00
" half peck of white onions,	2 00
" half peck yellow onions,	2 00
" half peck of red onions,	2 00
" peck of seedling potatoes, 1st prem.,	2 00
2d best peck of seedling potatoes, 2d prem.,	1 00
Best peck of table potatoes, 1st prem.,	2 00
2d best peck of table potatoes, 2d prem.,	1 00
Best three autumnal squashes,	1 00
" three crookneck squashes,	1 00
" three vegetable marrow,	1 00
" squash,	1 00
" half peck tomatoes,	1 00
" twelve roots salsify,	1 00
" peck white turnips,	1 00

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Best peck yellow turnips,.....	$1 00
" half peck Lima beans,.....	1 00
" half peck Windsor beans,.....	1 00
" peck sweet potatoes,.....	1 00
" six stalks rhubarb,.....	1 00

DIVISION I.

Grain, Flour, Meal, Seeds.

Committee—J. McMahon, Ann Arbor; Dexter Muzzy, Romeo; Philip S. Frisby, Springfield; Mr. Newman, Portland; J. R. Jones, Niles.

For the best two bushels winter wheat,.....	$2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels spring wheat,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels of rye,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels four rowed barley,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels two rowed barley,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels oats,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels yellow corn,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels white corn,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels peas,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels white beans,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels large clover seed,.....	2 00
2d best do., 2d prem.,.....	1 00
For the best two bushels small clover seed,.....	2 00

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2d best do., 2d prem.,..... $1 00
For the best two bushels of timothy seed,..... 2 00
2d best do., 2d prem.,..... 1 00
For the best two bushels buckwheat,..... 2 00
2d best do., 2d prem.,..... 1 00
For the best peck sugar cane seed,..... 1 00
For the best bushel of flax seed,..... 2 00
For the best bushel of red top grass seed,..... 2 00
For the best bushel of seed of any valuable grass that has been tried as a crop, of not less than two acres, within the State of Michigan, with a description of the manner of treatment, and how the seed was originally procured by the exhibitor, 5 00
For the best exhibition of a general assortment of seeds for field crops, greatest variety and quality of seeds to be taken into consideration,..Dip. and 5 00
For the best assortment and greatest variety of kitchen garden seeds,.....Dip. and 3 00
For the best barrel of flour made from Michigan white wheat,.....Dip. and 3 00
For the best barrel of flour made from Michigan red wheat,.....Dip. and 3 00
For the best assortment of heads of wheat, the growth of 1859, not less than six heads of each variety; the premium to be awarded to the person who shows the greatest number of varieties, most neatly arranged and correctly named, no assortment to contain less than 6 varieties,.Dip. and 5 00
For the best assortment of the same kind of oats, Diploma and..... 5 00
For the best assortment of heads of corn of the same kind,.....Dip. and 5 00

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DIVISION K.—MISCELLANEOUS ARTICLES.

CLASS I.

Committee—J. J. Newell, Adrian; B. Vernor, Detroit; B. Briscoe, Detroit; —— Hunter, Marshall; —— Thompson, Grand Rapids.

This committee will also have in charge the examination of all mechanical work, which may not be named or considered as belonging to any special class.

For the best locomotive, the manufacture of Michigan workshops, ...Silver Medal.
For the best and most commodious rail car, the manufacture of Michigan workshops,.....Silver Medal.
For the best and most commodious sleeping car of same make,.....Silver Medal.
For the best rail car for the transportation of live stock, same make,..... .....Silver Medal.
For the best freight car for general use, same make,..Dip.

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CLASS II.

Committee.—O. D. Conger, Port Huron; J. M. Edmunds, Detroit; A. Brown, Algansee; David Daniels, Clinton; E. B. Pond, Ann Arbor.

Best specimen of sawed lumber, not less than twenty boards, ...Diploma.
2d best specimen sawed lumber, not less than twenty boards,.....Diploma.
Best specimen dressed lumber, not less than fifteen boards, different varieties,.....Diploma.
2d best specimen dressed lumber, not less than 15 boards, different varieties, ...Diploma.
Best M. white pine shingles, hand made,.....Diploma.
2d best M. white pine shingles, hand made,.....Diploma.
Best specimen native copper, from mines in the State,..... ....Diploma.

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Best specimen iron ore from mines in the State,. Diploma.
Best specimen silver ore from mines in the State, Diploma.
Best specimen bituminous coal from quarry in the State,.....Diploma.
Best specimen anthracite coal from quarry in the State,.....Diploma.
Best specimen stone plaster, from quarry in the State,.....Diploma.
Best barrel ground plaster from quarry in the State,.....Diploma.

All such articles of manufacture, or of raw material, as may not be readily classified in any of the preceding divisions, will come under this Class and the charge of this Committee.

DIVISION L.

Premiums to be Awarded by the Executive Committee at their meeting in Winter.

For the best tile drained field in Michigan, not less than five acres, a plan and report of the expense to be submitted, with a description of the soil, subsoil and condition of the field before it was drained; also, if possible, the amount of crops grown upon it before and after drainage, and such other information as the competitor may deem proper to report,.....Silver cup of value not less than $15 00
For the best field of Indian corn, not less than four acres, the crop to have been shelled and weighed, and the weight of cured stalks to be reported in the written account, which shall also state the variety of the corn, its method of culture, and the treatment of the land, ...Dip. and 10 00
For the 2d best do., 2d prem,,..... 5 00
For the best crop of wheat, not less four acres, 1st prem.,..... 10 00

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2d best crop of wheat, not less four acres, second prem., ... $5 00
For the best crop of oats, 1st prem., ... 8 00
2d best crop of oats, 2d prem., ... 4 00
For the best crop of barley, 1st prem., ... 8 00
2d best crop of barley, 2d prem., ... 4 00
For the best crop of rye, ... 6 00

Competitors for premiums on the grain crops will be required to make a statement embracing the following particulars:

1. The previous crop on the land, and when, how much, and what kind of manure was last applied.

2. The location of the field, with its soil and subsoil, with its actual surveyed contents.

3. The kind of seed, where and how procured, the mode of sowing.

4. How the crop was harvested, how threshed and cleaned, and with what machinery.

5. The weight of grain as measured and weighed accurately, the weight of straw per acre, or for the crop *if possible to be ascertained.*

Root Crops.

For the best crop of carrots from not less than one acre, 1st prem., ... $5 00
2d best crop of carrots from not less than one acre, 2d prem., ... 3 00
For the best crop rutabagas from not less than one acre, 1st prem., ... 5 00
2d best crop rutabagas from not less than one acre, 2d prem., ... 3 00
For the best crop mangel wurtzel from not less than one half acre, 1st prem., ... 3 00
2d best do., 2d prem., ... 2 00
For the best crop sugar beets, from not less than one half acre, 1st prem., ... 3 00

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2d best crop sugar beets, from not less than one half acre, 2d prem., ... $2 00
For the best crop potatoes, from not less than 1 acre, 1st prem.,..... 5 00
2d best crop potatoes, from not less than one acre, 2d prem.,..... 3 00

For each of the roots crops statements will be required embracing the following particulars:

1. The exact area of the lot, stating the length and breadth of the land used for the crop.

2. The treatment and culture of the land preparatory to sowing the crop.

3. If sown in rows or rills, the distance apart of each drill; and the quantity of seed sown, and whether sown by hand or machine; if by machine, whose make was it?

4. The period of hoeing and thinning, and the amount of time spent in the culture of the crop while growing.

5. The weight of or measurements of the roots will be insisted on, and if the weight of tops could be given, it would be considered quite an addition to the value of the statement.

6. Method of securing the crop for winter use, with mode of using them for feeding purposes.

Miscellaneous Crops.

For the best crop of broom corn, not less than one acre,..... $5 00
For the best crop of clover seed, not less than one acre,..... 5 00
For the best crop of Timothy seed, not less than one acre,... ..... 5 00
For the best crop of beans, not less than one acre,. 5 00
For the best crop of peas not less than one acre,... 5 00
For the best crop of buckwheat, not less than one acre, ... 3 00

Statements will be required giving the particulars of

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the method of culture, the quantity of seed used per acre, the time consumed in cultivation, the method of harvesting, and of fitting for market.

Each statement must be accompanied with a certificate sworn to before an officer authorized to take affidavits, showing the surveyed contents of the lot in which the crop was grown is entered for a premium, and also the amount of the measured or weighed crops, signed by the surveyor and by the applicant for the premium, and also by such assistant in weighing and measuring as may be employed. The following may be the blank forms of such certificate:

——— County, ss.:—A. B. being duly sworn, says, he is a surveyor; that he surveyed with chain and compass the land upon which C. D. raised a crop of ——— the past season, and that the land was in one contiguous piece, and the quantity is ——— acres, and no more.

A. B., *Surveyor.*

Sworn to before me, this —— day of ——, 185 .

———, *Justice.*

——— County, ss.:—C. D., being duly sworn, says, that he raised a crop of ——— the past season upon the land surveyed by A. B., and that the quantity of grain raised thereon was ——— bushels measured in a sealed half bushel; and that he was assisted in harvesting and measuring said crop by E. F., and that the annexed statement, subscribed by this deponent, as to the manner of cultivation, expense, &c., is in all respects true, to the best of his knowledge and belief; and that the sample of grain exhibited is a fair average sample of the whole crop.

C. D.

Sworn to before me, this —— day of ——, 185 .

———, *Justice.*

——— County, ss.:—E. F., being duly sworn, says, that he assisted C. D. in harvesting, getting out and measuring his crop of ———, referred to in the above affidavits, and

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that the quantity of grain was ——— bushels, as stated in the affidavit of C. D. E. F.

Sworn to before me, this —— day of ——, 185 .

——— ———, *Justice.*

Essays.

The Executive Committee will award premiums on essays as follows:

For the best Essay on the Agriculture of the Grand River Valley, or any part thereof. Said essay to state the topographical features of the section described, the amount of cultivated and uncultivated lands within its limits, the approximate population, its geological characters, its mineral productions, its botanical productions, the agricultural character of the lands, the modes of culture pursued, the kind of crops raised, a description of the best farm sheddings or buildings for the accommodation of stock or crops, the herds of the best bred cattle, with notices of whence they were brought and when they came into the State, also of flocks of the best breeds of sheep, and of such horses, swine or other animals, as may show the present position of the section of the State described,.....$30 00

For the best essay on the cultivation of corn,..... 15 00

For the best essay on the cultivation of the grape,. 15 00

For the best essay on the growth, production and profitable consumption of hay,..... 15 00

For the best essay on the growth and profitable use of the sorghum plant, in the production of molasses or sugar, or as a fodder crop,..... 15 00

For the best essay on the right use of barnyard manure, and its application to improve land and produce crops,..... 15 00

For the best essay on the treatment of marsh lands, their drainage and after culture,..... 15 00

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Essays to compete for the above prizes will be required to be sent in to the Secretary by the first of January, 1860.

County Agricultural Societies.

The County Agricultural Society that shows the most efficient organization,...20 copies of Transactions.

The County Agricultural Society that receives the greatest amount of premiums at the Annual Fair of the State Society, reference being had to the population and distance of the county from the place of holding the Fair,....20 copies of Transactions.

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REPORTS

OF THE

COMMITTEES APPOINTED TO AWARD THE PREMIUMS

AT THE

TENTH ANNUAL EXHIBITION

OF THE

MICHIGAN STATE AGRICULTURAL SOCIETY.

DIVISION A.—CATTLE.

CLASS I.

Short Horns.

The Committee on Short Horns respectfully report that they have awarded premiums as follows:

Entry.		
76.	Best bull 4 years or over, D. M. Uhl, Ypsilanti,	$12 00
204.	2d best do., D. F. Dwight, Detroit,.....	10 00
102.	3d best do., J. Starkweather, Ypsilanti,.....	8 00
169.	Best bull 3 years, Findley McHardy, Almont,.	10 00
188.	2d best do., H. J. Heydenburgh, Kalamazoo,..	8 00
198.	3d best do., Lewis Potts, Clinton, ...	6 00
158.	Best bull 2 years,* J. B. Crippen, Coldwater,.	8 00
143.	2d best do., A. S. Brooks, Novi,.....	6 00
34.	Best bull 1 year old, S. Sly & Sons, Plymouth,	7 00
99.	2d best do., B. Loveman, Owosso,.....	5 00
98.	3d best do., Ira H. Butterfield, Utica,.....	3 00
49.	Best bull calf, S. Sly & Sons, Plymouth,.....	5 00
154.	2d best do., S. W. Dexter, Dexter,.....	4 00
194.	3d best do., Thos. Briggs, Clinton,.....	3 00

* Your Committee being unable to agree upon the merits of the Bulls two years old, would recommend that there be a new Committee appointed to exame the same.

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Entry.		
193.	Best cow 5 years or over, Thos. Briggs, Clinton,	$10 00
35.	2d best do., S. Sly & Sons, Plymouth,	8 00
161.	3d best do., J. B. Crippen, Coldwater,	6 00
162.	Best cow 4 years, J. B. Crippen, Coldwater,	10 00
153.	2d best do., S. W. Dexter, Dexter,	8 00
37.	3d best do., S. Sly & Sons, Plymouth,	5 00
30.	Best cow 3 years, S. Sly & Sons, Plymouth,	10 00
78.	2d best do., D. M. Uhl, Ypsilanti,	8 00
144.	3d best do., A. S. Brooks, Novi,	5 00
41.	Best 2 year old heifer, S. Sly & Sons, Plymouth,	8 00
79.	2d best do., D. M. Uhl, Ypsilanti,	6 00
25.	3d best do., M. L. Brooks, Northville,	4 00
43.	Best 1 year heifer, S. Sly & Sons, Plymouth,	7 00
146.	2d best do., A. S. Brooks, Novi,	5 00
80.	3d best do., D. M. Uhl, Ypsilanti,	3 00
46.	Best heifer calf, S. Sly & Sons, Plymouth,	5 00
163.	2d best do., J. B. Crippen, Coldwater,	4 00
27.	3d best do., M. L. Brooks, Northville,	3 00

Cow No. 159, 5 years old, having taken the first premium last year, she could not compete for premiums during the exhibition; we would therefore recommend a diploma.

H. A. TILLOTSON,
Chairman.

No. 100, Chas. Dusenbury, Troy, Oakland county, one two year old bull, is a very fine animal, but from want of an authenticated pedigree, was ruled out. The Committee, however, recommend a discretionary premium.

E. O. HUMPHREY,
Chairman.

CLASS II.

Devons.

The Committee on Devon Cattle respectfully report that the following premiums have been awarded by them:

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Entry.		
106.	Best bull 4 yrs. or over, J. W. Childs, Augusta,	$12 00
170.	2d best do., C. H. Williams, Coldwater,	10 00
88.	3d best do., I. Drake, Utica,	8 00
69.	Best bull 3 years old, J. Ballard & Sons, Niles,	10 00
87.	Best bull 2 years old, Thos. Flinn, Birmingham,	8 00
184.	2d best do., C. H. Williams, Coldwater,	6 00
114.	Best bull 1 year old, Jno. Allen, Coldwater,	7 00
30.	2d best do., Calvin Pierce, Disco,	5 00
171.	Best cow 5 years and over, C. H. Williams, Coldwater,	10 00
109.	2d best do., Jno. Allen, Coldwater,	8 00
172.	3d best do., C. H. Williams, Coldwater,	6 00
111.	Best cow 4 years old, Jno. Allen, Coldwater,	10 00
31.	Best cow 3 years old, Calvin Pierce, Disco,	10 00
112.	2d best do., Jno. Allen, Coldwater,	8 00
73.	3d best do., J. Ballard & Sons, Niles,	5 00
70.	Best 2 year old heifer, J. Ballard & Sons, Niles,	8 00
113.	2d best do., Jno. Allen, Coldwater,	6 00
177.	3d best do., C. H. Williams, Coldwater,	4 00
116.	Best yearling heifer, Jno. Allen, Coldwater,	7 00
179.	2d best do., C. H. Williams, Coldwater,	5 00
178.	3d best do., C. H. Williams, Coldwater,	3 00
118.	Best heifer calf, Jno. Allen, Coldwater	5 00
180.	2d best do., C. H. Williams, Coldwater,	4 00
32.	3d best do., Calvin Pierce, Disco,	3 00
117.	Best bull calf, Jno. Allen, Coldwater,	5 00
183.	2d best do., C. H. Williams, Coldwater,	4 00
119.	3d best do., Jno. Allen, Coldwater,	3 00

PAYNE K. LEACH,
L. O. GODDARD,
J. R. GROSVENOR,
H. SLY,
S. M. BARTLETT,
SAML. LYNDON,
Committee.

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CLASS III.

Herefords.

The Committee on Hereford Cattle report that the following awards were made:

Entry.		
94.	Best bull 3 years old, Thos. Aston, Elyria, Ohio,	$10 00
166.	Best bull 2 years old, C. M. Bowen, Lima,....	8 00
95.	Best bull 1 year old, T. Aston, Elyria, Ohio,..	7 00
167.	Best bull calf, C. M. Bowen, Lima,.....	5 00
96.	Best cow 5 years old, T. Aston, Elyria, Ohio,..	10 00
165.	2d best do, C. M. Bowen, Lima,.....	8 00
97.	Heifers 2 years old, T. Aston, Elyria, Ohio,...	8 00

H. A. TILLOTSON,
Chairman.

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CLASS VI.

Cross of Blood Cattle.

The Committee on Crosses of Blood Cattle respectfully report that they have made the following awards:

139.	Best cow 5 years or over, C. W. Greene, Farmington,.....	$10 00
137.	2d best do., C. W. Greene, Farmington, ...	8 00
138.	3d best do., " "	6 00
140.	Best cow 3 years and under 5, C. W. Greene, Farmington,.....	8 00
189.	2d best do., W. A. Hall, Clinton,.....	6 00
156.	Best heifer 2 years, J. B. Arms, Dexter,.....	7 00
142.	Best heifer 1 year, C. W. Greene, Farmington,	5 00
141.	2d best do., C. W. Greene, Farmington,.....	4 00

J. D. YERKES,
J. B. ARMS,
E. ARNOLD,
Committee.

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CLASS VII.

Grade and Native.

The Committee on Grade and Native Cattle report that premiums have been awarded as follows:

Entry.		
1.	Best cow 5 years old, John H. Button, Farmington,	$10 00
124.	2d best do., Joseph Tireman, Detroit,	8 00
123.	3d best do., Joseph Tireman, Detroit,	6 00
86.	Best cow 3 years old, J. Tolman, Farmington,	8 00
121.	2d best do., T. Hopson, Detroit,	6 00
67.	3d best do., S. Sly & Son, Plymouth,	4 00
90.	Best heifer 2 years old, W. H. Stout, Troy,	7 00
51.	2d best do., S. Sly & Son, Plymouth,	5 00
2.	3d best do., John H. Button, Farmington,	3 00
134.	Best heifer 1 year old, Jas. Connolly, Marshall,	5 00
14.	2d best do., R. P. Wixom, Farmington,	4 00
126.	3d best do., Joseph Tireman, Detroit,	2 00
135.	Best heifer calf, James Connolly, Marshall,	4 00
92.	2d best do., W. H. Stout, Troy,	2 00
108.	3d best do., Robt. Rumney, Hamtramck,	1 00

G. T. McKENZIE,
WM. WILSON,
B. PIERSON,
Committee.

No. 83, Lady of the Lake, exhibited by D. M. Uhl, of Ypsilanti, through mistake, was displaced, and could not come into competition. The Committee, however, think her one worthy of the favorable consideration of the Executive Committee for a Diploma.

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CLASS VIII.

Working Oxen.

The Committee on Working Oxen make the following report of awards given by them:

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Entry.

136. Best yoke working oxen 4 years, C. W. Greene, Farmington,.....$10 00
3. 2d best do., J. H. Button, Farmington,..... 8 00
107. 3d best do., R. Rumney, Hamtramck,..... 6 00
4. Best 5 yoke 4 years, from one county, J. H. Button, Farmington,..... 15 00

EBER DURHAM,
JOHN NORTON,
Committee.

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CLASS IX.

Steers.

The Committee on Steers report that they have awarded the following premiums:

101. Best yoke of steers 4 years, J. Starkweather, Ypsilanti,.....$10 00
8. 2d best do., R. P. Wixon, Farmington,..... 8 00
131. 3d best do., Jas. Smith, Greenfield,..... 6 00
5. Best yoke of steers 3 years, J. H. Button, Farmington,..... 9 00
15. 2d best do., W. L. Coonley, Farmington,..... 7 00
85. Best yoke of steers 2 years, O. Botsford, Farmington,..... 6 00
191. 2d best do., W. A. Hall, Clinton,..... 4 00
105. 3d best do., H. A. Sneider, Greenfield,..... 2 00
185. Best yoke of steers 1 year, O. M. Easterly, Fredonia, ... 5 00
10. 2d best do., R. P. Wixon, Farmington,. 3 00
11. Best trained yoke of oxen or steers, R. P. Wixon, Farmington,..... 10 00
101. 2d best do., John Starkweather, Ypsilanti,... 7 00

EBER DURHAM,
JOHN NORTON,
Committee.

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CLASS X.

Fat Cattle.

The Committee on Fat Cattle make the following report:

Entry.

202. Best pair fat oxen, A. D. Powers, Farmington,.....$10 00

190. 2d best heifer 3 years, W. A. Hall, Clinton,... 4 00

RALPH SACKETT,
PETER FERGUSON,
GILBERT GAGE,
Committee.

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CLASS XI.

Milch Cows.

The Committee on Milch Cows make the following report:

128. 2d best milch cow, James Smith, Greenfield,.. $8 00

196. 3d best do., John Roberts, Detroit,..... 6 00

Your Committee on Milch Cows would also report that they find the entries in that class very limited, and none of those worthy of much note, and the rule in no case strictly complied with, but would recommend that a second premium be awarded to No. 128, James Smith, and that a third premium be awarded to No. 196, John Roberts. Your Committee believe that one reason why the rule was not complied with was that the rule was not published till after the first period had passed. Your committee recommend that in future the time for trial be ten consecutive days in the month of June and also ten consecutive days in the month of September, but the precise days of each month be left optional with each competitor.

All of which is respectfully submitted.

M. HEYDENBURK,
Chairman.

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CLASS XII.

Foreign Cattle.

The Committee to which was given the duty of reporting on the Foreign Cattle exhibited, have awarded the following premiums:

Entry.

152. Best shorthorn bull 3 years old, S. W. Dexter, Dexter, ... Diploma.

158. Best shorthorn bull 2 years old, J. B. Crippen, Coldwater, ... Diploma.

63. Best shorthorn bull calf, J. Dusenbury, Avon, N. Y., ... Diploma.

162. Best shorthorn cow 3 years old, J. B. Crippen, Coldwater, ... Diploma.

122. Best Devon bull 2 years, R. Wingfield, Amherstburg, ... Diploma.

212. Best Devon bull 1 year, J. H. Hamlin, Willinck, N. Y., ... Diploma.

213. Best Devon bull calf, J. H. Hamlin, Willinck, N. Y., ... Diploma.

214. Best Devon cow 3 years old, J. H. Hamlin, Willinck, N. Y., ... Diploma.

216. Best Devon cow 2 years old, J. H. Hamlin, Willinck, N. Y., ... Diploma.

217. Best Devon heifer calf, J. H. Hamlin, Willinck, N. Y., ... Diploma.

WM. WHITFIELD,
R. L. ROME,
J. C. WILLIAMS,
S. P. WORMLEY,
Committee.

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HORSES.

CLASS XIII.

Horses for All Work.

The Committee on Class XIII, comprising Horses of All Work, report the following as their awards:

Entry.		
198.	Best stallion 4 years or over, E. B. Smith, Mt. Vernon,	$15 00
66.	2d best do., R. R. Briggs, Romeo,	10 00
308.	3d best do., John Stark, Ypsilanti,	8 00
18.	Best stallion 3 years, C. H. Coggshall, New Hudson,	10 00
251.	2d best do., Brayton Flint, Novi,	8 00
241.	3d best do., Alexander Ruby, Shelby,	5 00
2.	Best stallion 2 years, Chas. Grob, Gross Isle,	9 00
53.	2d best do., J. D. Perry, Redford,	7 00
280.	3d best do., Chas. Crawford, Oakland,	5 00
207.	Best stallion 1 year, C. Fulkerson, Marshall,	8 00
105.	2d best do., Ira H. Butterfield, Utica,	6 00
275.	Best stallion suckling colt, E. B. Smith, Mt. Vernon,	5 00
40.	2d best do., F. E. Eldred, Detroit,	3 00
275.	Best brood mare 4 years or over with colts not over 2 years, E. B. Smith, Mt. Vernon,	12 00
11.	2d best do., A. D. Power, Farmington,	10 00
136.	3d best do., H. H. Norton, Howell,	8 00
211.	Best brood mare 3 years or over, "Winona," E. N. Wilcox, Detroit,	9 00
157.	2d best do., Joseph Tireman, Detroit,	7 00
68.	3d best do., J. Kearsley, Detroit,	5 00
29.	Best brood mare 2 years old, F. E. Eldred, Detroit,	8 00
30.	2d best do., F. E. Eldred, Detroit,	6 00
221.	Best 1 year old mare, E. H. Davis, Kalamazoo,	6 00
76.	2d best do., F. E. Eldred, Detroit,	5 00

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Entry.

75. Best sucking mare colt, F. E. Eldred, Detroit, 5 00

226. 2d best do., James Taylor, Kalamazoo,..... 3 00

No. 218, O. C. Hill, Texas, discretionary premium for superior mare and colts.

H. H. EMMONS,
SAMUEL LYNDON,
WM. McHARDY,
WINFIELD SCOTT,
WM. JOHNSON,
Committee.

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CLASS XIV.

Blood Horses.

204. Best stallion 4 years, H. R. Andrews, Detroit,.$15 00

The Committee on Blood Horses, after making thorough examination of this class, beg leave to state that in consequence of the general want of satisfactory evidence, as to the purity of the blood of the horses presented, they are deprived of the satisfaction of making more than one solitary award, to Mr. H. R. Andrews, of Detroit, whose stallion, "Capt. Buford," (for whom a satisfactory pedigree was furnished,) bears unmistakable evidence, in his conformation, action and performances, of being a direct descendant from the English thoroughbred horse, the first and only premium. While the committee were most favorably impressed with the size, action and general appearance of Mr. C. W. Greene's horse, "Farmingtonian," and Mr. F. McHardy's "Black Hawk," and believe them to be valuable stallions in the class to which they properly belong, still they are obliged by the rules of your Society, and their unanimous opinion in the justice and propriety of the course, to withhold premiums where the evidence

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of unadulterated pedigree is not perfectly clear and satisfactory.

C. E. STUART,
SAML. P. BRADY,
WM. HENDERSON,
A. S. BERRY,
Committee.

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CLASS XV.

Draught Horses.

The Committee on Draught Horses report that they have made the following awards:

Entry.		
120.	Best stallion 4 years or over, C. Russ, Cambridge,	$10 00
237.	2d best do., Lewis Willy, Lyons,	8 00
254.	Best stallion 8 years, M. S. Speer, Pontiac,	9 00
59.	2d best do., Fred C. Carlow, Detroit,	7 00
172.	Best brood mare 4 years or over, with colts not over 2 years, Jerry Davidson, Detroit,	9 00
6.	Best brood mare 3 years, R. P. Wixon, Farmington,	8 00
166.	Best stallion 2 years, H. A. Snyder, Greenfield,	8 00
318.	Best sucking colt, J. Davison, Detroit,	5 00
167.	Best brood mare 2 years, H. A. Snyder, Greenfield,	7 00

A. WALES,
J. A. RUCKER,
Committee.

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CLASS XVI.

Trotting Horses.

The Committee on Trotting Horses make the following report of awards:

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Entry.

288. Best trotting stallion 5 years, A. C. Fisk, Coldwater,.....Silver Cup.
289. 2d best do., A. C. Fisk, Coldwater,.....$10 00
186. 3d best do., A. Laplan, Detroit, ... 8 00
1. Best trotting stallion 4 yrs. old, John P. Hawley, Pontiac,..... 10 00
27. 2d best do., F. E. Eldred, Detroit,..... 8 00
109. Best trotting stallion 3 yrs., B. Wright, Utica, 8 00
92. 2d best do., R. Hunter, Birmingham,..... 6 00
212. Best stallion 2 years, Capax Abdallah, E. N. Wilcox, Detroit,..... 8 00
85. 2d best do., C. H. Williams, Coldwater,..... 7 00
183. Best stallion 1 year, Abdallah, A. Wales, Erin, 8 00
50. 2d best do., Forerunner Abdallah, B. Dermont, Detroit,..... 6 00
32. Best stallion sucking colt, F. E. Eldred, Detroit, 5 00
192. 2d best do,, F. McHardy, Almont,..... 3 00
99. Best brood mare 4 years or over, with colt not over 2 years, J. H. Caniff, Detroit,..... 12 00
297. 2d best do., E. N. Wilcox, Detroit, "Lady Washington,"..... 10 00
190. 3d best do., B. G. Stimson, Detroit,..... 8 00
86. Best brood mare 3 years, Henry Moore, Coldwater, ... 9 00
109. 2d best do., C. E. Leach, Utica,..... . 7 00
249. 3d best do., C. A. Greene, Farmington,..... 5 00
132. Best brood mare 2 years old, J. Starkweather, Ypsilanti,..... 8 00
69. Best sucking mare colt, J. H. Caniff, Detroit,. 5 00
207. 2d best do., E. N. Wilcox, Detroit, "Manhatta," 3 00
106. Best pair matched trotting horses, 5 years or over, G. O. Williams, Detroit,.....Diploma.
216. 2d best do., W. W. Robins,.....Transactions.
100. Best single trotting horse 5 years, J. H. Caniff, Detroit,.....Diploma.
116. 2d best do., Byron Greene, Detroit,....Transactions.

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The Committee would further say that the stallion yearling "Frank," No. 281, exhibited by H. M. Wright, Coldwater, is entitled in the opinion of the Committee, to a first premium. The reason of this recommendation is that the colt "Frank" was shown to the Committee in sulkey, and would not at that time show any trotting action, and upon such exhibition they declared their awards by tying on the ribbons, but afterwards the colt, "Frank," was shown in leading and showed his trotting action that entitles him to this consideration.

Mr. E. N. Wilcox also showed "Roebuck," by Abdallah, three years old stallion, a very fine colt, but was not exhibited for a premium. He showed marks of fine breeding.

The Committee would also say that the trotting stallions were sent off by the Committee this morning under protest by the owners of the trotting stallions that trotted yesterday, but inasmuch as the weather was such that the Committee could not conclude the trial of speed yesterday and such trial was adjourned to this morning, when all stallions had a chance to compete, they could not make awards except by general rules.

The condition of the track this morning was heavy and the time made may be considered remarkable. The track yesterday was very heavy, and must be considered as several seconds slow.

M. E. CROFOOT,
K. C. BARKER,
W. H. HAWKINS,
Committee.

CLASS XVII.

Stable of Colts.

The Committee on Stable of Colts report that they have made the following awards:

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Entry.

80. Best 2 or more colts, bred in Michigan, from 1 mare, exhibited with dam, F. E. Eldred, Detroit,.....$25 00

222. Best 5 colts bred in Michigan, from 1 sire and 5 different dams, Azro Healy, Kalamazoo,.. 25 00

B. J. BIDWELL,
C. FULKERSON,
L. D. WATKINS,
R. S. CAMBORN,
Committee.

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CLASS XVIII.

Matched and Single Horses.

The Committee on Matched and Single Horses submit the following as the result of their examinations:

94. Best pair matched carriage horses, 4 years or over, Wm. Caverly, Detroit,.....$15 00

108. 2d best do., J. Henderson, Pontiac,..... 10 00

301. Best pair matched horses for all work 4 years or over, J. S. Tibbits, Plymouth,..... 12 00

284. 2d best do., W. P. Clayton, Detroit,..... 10 00

206. Best pair matched horses for all work 3 years old, A. Ayres, Independence,..... 10 00

317. 2d best do., Thos. Clark, Hunter Creek,..... 8 00

231. Best pair draught horses 4 years, W. Dingman, Farmington,..... 12 00

147. 2d best do., A. Pearsall, Troy,..... 10 00

112. Best single carriage horse 4 years old, Byrom Greene, Detroit,..... 8 00

229. 2d best do., Wm. Hall, Detroit,..... 6 00

91. Best single carriage horse 3 years, B. J. Bidwell, Tecumseh,..... 6 00

240. 2d best do., T. Kent, Farmington,..... 4 00

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Entry.

230. Best trained saddle horse, J. L. Harris, Detroit, ...Diploma.

W. S. WILCOX,
T. G. COLE,
R. J. TWOMBLY,
E. O. HUMPHREY,
C. FULKERSON,
Committee.

WM. WHITFIELD,
D. M. UHL,
E. ARNOLD,
Committee on Draught.

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CLASS XIX.

Foreign Horses.

The Committee to which was given the duty of reporting on horses entered in the Foreign Class, reports:

198. Best stallion for all work, E. B. Smith, Mt. Vernon,.....Diploma.
194. Best blood stallion, F. McHardy, Almont,...Diploma.
280. Best mare for all work, H. M. Wright, Coldwater, ...Diploma.
285. Best blood stallion, B. J. Bidwell, Tecumseh,.Diploma.

C. C. NORTON,
THEO. ARMSTRONG,
R. J. GOETCHIUS,
CHAS. A. MARK,
JOHN E. KITTON,
HENRY METZ,
Committee.

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CLASS XX.

Jacks and Mules.

Entry.

117. Ira H. Butterfield, Utica, 2d prem.,..... $5 00

This committee represent with regret the absence of all jackasses from the exhibition. This class of stock attracts great attention in other States. It is thought that a judicious cross of the Canadian pony with the Spanish jackass would produce an excellent stock. The enduring and persevering qualities of the mule recommend the animal to your serious consideration, for future encouragement. Perhaps a higher rate of awards might tend towards the desired effect. Although your committee have but the two mules above named produced for inspection and award, yet as they are not of the best class the committee deem it wise in order to maintain a high standard of excellence, to award them but the second prize.

F. E. ELDRED,
Chairman.

DIVISION B.

CLASS I.

Spanish Merino, Saxon and Silesian Sheep.

The committee on Class 1, Spanish Merino Sheep, make the following report of their decisions:

148. Best buck 3 years or over, N. S. Schuyler, Birmingham, ...Dip. and $5 00
173. 2d best do., B. Peckham, Parma,..... 5 00
74. Best buck 2 years, B. Peckham, Parma, Diploma and..... 5 00
55. 2d best do., N. S. Schuyler, Birmingham,..... 5 00
75. Best buck 1 year, B. Peckham, Parma, Dip. and..... 4 00
128. Best 5 buck lambs, J. D. Yerkes, Northville, Diploma and..... 4 00

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Entry.

76. 2d best do., B. Peckham, Parma,..... $4 00
77. Best 5 ewes three years or over, B. Peckham, Parma,..... 8 00
94. 2d best do., J. Starkweather, Ypsilanti,..... 6 00
158. 3d best do., N. S. Schuyler, Birmingham,..... 4 00
78. Best 5 ewes 2 years old, B. Peckham, Parma,.. 6 00
85. 2d best do., B. Peckham, Parma,..... 5 00
95. 3d best do., John Starkweather, Ypsilanti,.... 4 00
86. Best 5 ewes 1 year old, B. Peckham, Parma,.. 6 00
79. 2d best do., B. Peckham, Parma,..... 5 00
96. 3d best do., John Starkweather, Ypsilanti,.... 4 00
129. Best 5 ewe lambs, J. D. Yerkes, Northville,.. 6 00
80. 2d best do., B. Peckham, Parma,..... 5 00
161. 3d best do., N. S. Schuyler, Birmingham,..... 4 00

HORACE BRADLEY,
JOHN P. ROWE,
B. PIERSON,
Committee.

CLASS II.

French Merinos.

The Committee on French Merinos report that they have made the following awards:

57. Best buck 3 years old, Ira H. Butterfield, Utica, Dip. and..... $5 00
58. 2d best do., Ira H. Butterfield, Utica,..... 5 00
63. Best 5 ewes 3 years old, Ira H. Butterfield, Utica, ... 8 00
64. Best 5 ewes 2 years old, Ira H. Butterfield, Utica, ... 6 00
65. 2d best do., Ira H. Butterfield, Utica,..... 5 00
145. Best buck 2 years old, N. S. Schuyler, Birmingham, ... 5 00

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Entry.

146. Best buck 1 year old, N. S. Schuyler, Birmingham,.....Dip. and $4 00

147. 2d best do., N. S. Schuyler, Birmingham,..... 4 00

WALTER WRIGHT,
A. GARDNER,
THOS. McCLUMPHA,
Committee.

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CLASS III.

Mutton Sheep.

The Committee on Mutton Sheep report that the premiums have been awarded as follows:

39. Best buck 3 years old, W. Whitfield, Waterford,.....Dip. and $5 00

40. Best buck 2 years old, W. Whitfield, Waterford,.....Dip. and 5 00

135. Best 5 buck lambs, Daniel Whitfield, Pontiac, Diploma and..... 4 00

41. 2d best do., Wm. Whitfield, Waterford,..... 4 00

131. Best pen ewes 3 years or over, Daniel Whitfield, Pontiac,..... 8 00

132. 2d best do., Daniel Whitfield, Pontiac,..... 6 00

42. Best pen ewes 2 years, Wm. Whitfield, Waterford,..... 6 00

133. 2d best do., Daniel Whitfield, Pontiac,..... 5 00

44. Best pen ewes 1 year, Wm. Whitfield, Waterford,..... 6 00

43. 2d best do., Wm. Whitfield, Waterford,..... 5 00

45. Best pen 5 ewe lambs, Wm. Whitfield, Waterford,..... 6 00

134. 2d best do., Daniel Whitfield, Pontiac,..... 5 00

136. Best buck 1 year old, Daniel Whitfield, Pontiac,.....Dip. and 4 00

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Entry.

137. 2d best do., Daniel Whitfield, Pontiac,..... $4 00

JOHN WATERMAN,
SAMUEL LYNDON,
Committee.

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CLASS IV.

Cross of Blood and Grade Spanish, French, Silesian and Saxon Sheep.

The Committee on Cross Blood Sheep have made the following awards:

182. Best buck 3 years, N. S. Schuyler, Birmingham,.....Dip. and $5 00
149. 2d best do., N. S. Schuyler, Birmingham,..... 5 00
150. Best buck 2 years, N. S. Schuyler, Birmingham,.....Dip. and 5 00
151. 2d best do., N. S. Schuyler, Birmingham,..... 5 00
152. Best buck 1 year, N. S. Schuyler, Birmingham,.....Dip. and 4 00
153. 2d best do., N. S. Schuyler, Birmingham,..... 4 00
159. Best 5 ewes 3 years, N. S. Schuyler, Birmingham,..... 8 00
91. 2d best do., B. Otis, Greenfield,..... 6 00
160. Best 5 ewes 2 yrs., N. S. Schuyler, Birmingham, 6 00
183. 2d best do., N. S. Schuyler, Birmingham,..... 5 00
142. 3d best do., J. C. Williams, Greenfield,..... 4 00
160½. Best 5 ewes 1 year, N. S. Schuyler, Birmingham,..... 6 00
181. 2d best do., Joseph Tireman, Detroit,..... 5 00
92. Best 5 ewe lambs, B. Otis, Greenfield,..... 6 00
143. 2d best do., J. C. Williams, Greenfield,..... 5 00

W. L. COONLEY,
G. E. BRADLEY,
CURTIS BABCOCK,
Committee.

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CLASS VI.

Foreign Sheep.

The Committee to make awards upon Foreign Sheep have come to the following decision:

Entry.

128. Best 5 buck lambs, J. D. Yerkes, Northville,.. Dip.
167. Best buck, Jas. Smith, Chatham, C. W.,..... Dip.
173. Best 5 lambs, Jas. Smith, Chatham, C. W.,... Dip.

D. CLARKSON,
L. A. JONES,
Committee.

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CLASS VII.

Swine.

The Committee on Swine made the following awards:

5. Best Essex boar 1 year old or over, J. S. Tibbits, Plymouth,..... $5 00
6. 2d best do., J. S. Tibbits, Plymouth,..... 3 00
7. Best Essex breeding sow 1 year old, J. S. Tibbits, Plymouth,..... 5 00
9. best lot Essex pigs not less than 4 and under 10 months, J. S. Tibbits, Plymouth,..... 5 00
8. 2d best do., J. S. Tibbits, Plymouth,..... 3 00
3. Best grade boar over 6 months and under 1 year, Dr. A. A. Gardner, Northville,..... 3 00
186. Best grade breeding sow 1 year, E. Hamilton, Royal Oak,..... 5 00
89. 2d best do., H. A. Snyder, Greenfield,..... 3 00
25. Best grade breeding sow 6 months and under 1 year old, Dr. A. A. Gardner, Northville,.. 3 00
20. Best lot grade pigs not less than 4 and under 10 months, A. D. Power, Farmington,..... 5 00
4. 2d best do., Dr. A. A. Gardner, Northville,... 3 00
88. Best fat hog, H. A. Snyder, Greenfield,..... 5 00

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Entry.

51. Best Suffolk boar, 2 years, R. Carothers, DeKalb, Ohio,.....Diploma.
188. Best Suffolk boar 1 year, E. Hamilton, Royal Oak,..... $5 00
53. Best Suffolk boar 6 months and under 1 year old, Robert Carothers, DeKalb, O.,.....Diploma.
30. Best Suffolk sow 1 year, F. E. Eldred, Detroit, 5 00
52. 2d best do., Robert Carothers, DeKalb, O.,..Diploma.
54. Best Suffolk sow 6 months and under 1 year old, Robert Carothers, DeKalb, O.,.....Diploma.
34. Best Leicester 2 years and over, J. P. Clark, Detroit,..... 5 00
31. Best Berkshire sow, F. E. Eldred, Detroit,... 5 00

C. A. GREEN,
A. PEARSALL,
M. S. HADLEY,
Committee.

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CLASS VIII.

Poultry.

127. Best Dorking fowls, not less than 3, 1 cock and 2 hens, Francis Leslie, Dearborn,..... $3 00
192. 2d best do., E. Hamilton, Royal Oak,..... 2 00
122. Variety of best Asiatic fowls not less than 3 of each kind, E. H. Cressy, Royal Oak,..... 3 00
90. 2d best do., Walter Buhl, Detroit,..... 2 00
139. Best lot of geese not less than 3, 1 gander and 2 geese, Geo. Ford, Greenfield,..... 3 00
22. 2d best lot of turkeys as above, Mrs. F. Leslie, Dearborn,..... 2 00
111. Best lot of Bramah Pootras and of any variety, E. H. Cressy, Royal Oak,..... 3 00
26. Best lot of one variety of Bantams, C. Bacon, Detroit,..... 2 00

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The undersigned, committee on Poultry, beg leave to report that the above is their award of premiums; and, in addition, beg leave to report that the show of turkeys was poor, and but one coop, not numbered, deserving of first premium, and they, therefore, award 2d premium as above to F. Leslie, No. 22. Further, they find but one coop of ducks, but there being only *a pair*, they cannot award any premium—as instructions do not award any, but we recommend a discretionary premium to No. 72, Wm. Berry, of Detroit. Further, they find but *one coop mixed breeds* of fowls to which they can award a premium, No. 117, E. H. Cressy, Royal Oak, 1st premium. Further, they find no coop of wild and tame geese nor of turkeys to which they can award any premium. Further, they would recommend a discretionary premium to H. H. Hodgson, of Royal Oak, No. 126, 1 pair Japan fowls—unusual breed in this country. Further, they recommend a discretionary premium to Charles Tucker, of Detroit, No. 174, 1 coop beautiful seabright fowls. Further, they recommend a discretionary premium to No. 37 and 38, J. D. Fairbank, Detroit, 2 coops of English Pheasants, or Gold and Silver Pheasants. They also recommend a discretionary premium to William Merritt, Detroit, No. 14 and 15, for a pure variety of Austrian Fowl, so called.

PETER DESNOYER,
W. W. MURPHY,
Committee.

DIVISION C.

CLASS I.

Implements for Farm.

The committee to make the awards on Class 1 and 2, of Farm Implements, report as follows:

146. Best corn stalk and straw cutter, D. Smith, McGrawville,..... Diploma and $3 00

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Entry.

188. Best corn stalk cutter, A. B. & G. H. Felt, Brooklyn, ... $3 00
45. Best horse rake, P. Waters, Jackson,..... 3 00
105. Best ox-yoke, D. O. & W. S. Penfield, Detroit, 2 00
156. Best stump puller, F. Traxler, Saline..... 10 00

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CLASS II.

Farm Implements.

148. Best carriage harness, Hayden & Baldwin, Detroit, ... $3 00
149. Best harness for one horse, Hayden & Baldwin, Detroit,..... 3 00
104. Best 6 milk pans, D. O. & W. S. Penfield, Det., 2 00
119. Best lot grain measures, " " " 1 00
69. Best doz. wire tied brooms, F. S. Joy, Detroit, 2 00
70. 2d " " " " 1 00
33. Best bee hive,* R. C. Otis, Kenosha, Wis.,... 3 00
96. Best 6 hand rakes, D. O. & W. S. Penfield, Detroit, ... 2 00
46. Best 6 hay forks, F. Waters, Jackson,..... 2 00
47. Best 6 manure forks, " " 2 00
161. Cheese vat, John Clayton, Plymouth,.....Diploma.

The committee recommend the Bee Hat (No. 33) of R. C. Otis, Kenosha, Wis., as worthy of notice.

M. ROGERS,
L. V. JUDSON,
JOHN ALLEN,
Committee.

* For consideration.

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CLASS III.

Farm Implements.

The Committee on Class 3, of Farm Implements, report the awards made by them as follows:

Entry.

78. Best horse power for general purposes on sweep or lever principle, M. Smith, Birmingham, Diploma and..... $5 00
38. Best mowing machine, R. L. Howard, Buffalo, Diploma and..... 10 00
82. 2d best mowing machine, F. B. Squires, Buffalo, Diploma and..... 5 00
37. Best grain reaper, R. L. Howard, Buffalo, Diploma and..... 10 00
82. 2d best grain reaper, F. B. Squires, Buffalo, Diploma and..... 5 00
37. Best grain reaper, R. L. Howard, Buffalo, Diploma and..... 10 00
83. 2d best grain reaper, F. B. Squires, Buffalo, Diploma and..... 5 00
124. Best thresher, to be used with separate horse power, H. Aldrich, Michigan City, Indiana, Diploma and..... 10 00
133. 2d best do., John Cox, Three Rivers, Dip. and 5 00
62. Best seed planter for hand or horse power for hill and drills, John Miller, Bucyrus, Ohio, Diploma and..... 5 00
77. Best portable saw mill for wood and farm use, M. Smith, Birmingham, Diploma and..... 5 00
190. Best corn sheller, hand power, A. B. & G. H. Felt, Brooklyn, Diploma and..... 5 00
108. Best vegetable cutter, D. O. & W. S. Penfield, Detroit, Diploma and..... ..... 5 00
150. Best machine for the manufacture of drain tile, John Daines, Birmingham, Diploma and.... 5 00

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Entry.

194. Best drain tile, not less than 10 feet, John Daines, Birmingham,..... $3 00
79. Best portable cider mill, M. Smith, Birmingham, Diploma and..... 5 00
48. Best and most numerous collection of agricultural implements manufactured in this State by or under the supervision of the exhibitor, materials, workmanship, utility, durability and prices to be considered, F. Waters, Jackson, Diploma and..... 8 00
2. Best specimen steam engine, A. Day, Detroit, Diploma and..... 10 00
1. Best shingle machine, A. Day, Detroit,.....Diploma.
4. Combined smut and separating machine, Simon Howes, Silver Creek,.....,...Diploma.
12. Carpet fastener, Thomas Brewster, N. Y.,..Diploma.
18. Cracker and biscuit machine, J. & C. Hollyland, Rochester, New York,.....Diploma.
68. Best clover hulling machine, John C. Birdsall, West Henrietta, New York,.....Diploma.
87. Best 2 horse mowing machine, C. Aultiman, Starke, Ohio,.....Diploma.
151. Best corn harvester, A. S. Stoddard, Tecumseh, "
152. Best grass seed sower, S. Stanbro, Plymouth, "
182. Best corn husker, D. C. Smith, Tecumseh,.. "
187. Best potato digger, U. L. Linnell, Adrian,... "

No. 201, Wetherell's Patent Horse Hoe and Cultivator, exhibited by J. C. Stoddard, Worcester, Mass., the committee think favorably of it, but are unable to give it a positive recommendation without fuller proof of its practical utility.

The Grain Reaper (No. 166) manufactured by John Riley at Racine, Wis., possesses several minor qualities of value, and the committee would especially refer to the ar-

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rangement of the cutting apparatus, in which the nearness of the guards or fingers permits a very low rate of motion of the cutters, and recommend a Diploma.

C. WHEELER,
L. D. WATKINS,
WILLIAM TAFT,
C. T. LYON,
L. D. CRIPPEN,
Committee.

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CLASS IV.

Farm Implements.

The committee on Class 4, of Farm Implements, report that they have made the following awards:

Entry.		
180.	Best soil plow for light soils, furrow 6 and 12 inches, D. Smith & Co., Commerce, Dip. and	$3 00
90.	2d best soil plow for light soils, furrow 6 and 12 inch, D. O. & W. S. Penfield, Detroit, Diploma and.....	3 00
91.	Best plow for fallows or old land, D. O. & W. S. Penfield, Detroit, Diploma and.....	3 00
49.	Best wheat cultivator, F. Waters, Jackson, Diploma and.....	3 00
50.	Best corn cultivator, F. Waters, Jackson, Diploma and.....	3 00
5.	Best harrow, A. D. Power, Farmington,.....	3 00
72.	Howell's Rotating harrow, W. H. Fargo, Cleveland, Ohio,.....	Diploma.
147.	Self-sharpening shovel plow, J. A. Baldwin, Dowagiac,.....	"
81.	Plow for all soils, M. Smith, Birmingham,....	"
170.	Double steel plow, T. A. Parker, Detroit,....	"
183.	Wrought iron plow, John B. Dixon, Ypsilanti,	"

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Entry.

28. Baker's Rough & Ready Cultivator, S. Acker, Detroit,.....Diploma.

64. Root's Patent Revolving Harrow and Plow, H. M. Albertson, Detroit,..... ..... "

56. 2 Rotating Plows, E. G. Hayden, Milwaukee,. "

The committee would notice the plows of very superior manufacture from the Forest City Agricultural Works of Cleveland, Ohio, B. Martin & Co., which were not in season for regular entry, but the committee would recommend a Diploma.

The committee would also favorably notice a Revolving Harrow, entered by Wm. Fargo, of Cleveland, for which they recommend a Diploma.

Also, Root's Patent Revolving Harrow, entered by H. M. Albertson, and award a Diploma. These revolving harrows are a new article, and if they possess the advantages claimed for them by their exhibitors, they will be a valuable acquisition to the list of Farm Implements. Also Baker's Rough and Ready Cultivator, an article of very superior merit, and which will be of the greatest value to the farmer. The committee think this cultivator richly deserves a Diploma.

JAMES BAYLEY,
Committee.

DIVISION D.

Butter.

The Committee on Butter, Cheese and Sugar, report the following awards:

18. Best 15 lbs., made in June, Mrs. S. S. Gale, Farmington,..... $5 00

17. Best 15 lbs., made at any time, Mrs. S. S. Gale, Farmington,..... 5 00

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Entry.

22. 2d best do., Mrs. J. Smith, Greenfield,..... $3 00
21. 3d best do., Mrs. J. Smith, Greenfield,..... 2 00

Cheese.

12. Best cheese 1 year old and over, not less than 25 lbs., L. Lapham, Farmington,..... $7 00
13. 2d best do., N. Lapham, Farmington,..... 5 00
26. 3d best do., C. M. Bowen, Lima,..... 3 00
11. Best new cheese, foreign, H. F. Giddings, Wayne, Ohio,..... 5 00
9. 2d best do., Miller & Judd, Detroit,..... 4 00
6. 3d best do., R. R. Briggs, Romeo,..... 3 00
7. Best sage cheese, R. R. Briggs, Romeo,..... 5 00
14. 2d best do., Norton Lapham, Farmington,.... 3 00

Sugars.

19. Best 10 lbs. maple sugar, S. S. Gale, Farmington,..... ..... $3 00
39. Best 5 lbs. honey, E. B. Spencer,..... 2 00
8. 23 boxes honey, R. C. Otis, Kenosha, Wis., Diploma.

Your committee would suggest that butter for exhibition be packed in jars or firkins instead of rolls, as the contact with the air injures the flavor so much that it is impossible to judge with accuracy.

MRS. J. D. YERKES,
MRS. G. W. COLLINS,
W. H. MONTGOMERY,
Committee.

DIVISION E.

CLASS I.

Domestic Manufactures—Home Made.

The Committee on Domestic Manufactures, home made, report:

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Entry.		
237.	Best pair woolen blankets, Mrs. Mary Castle, Bennington,	$5 00
198.	2d best do., Mrs. D. B. Smith, Farmington,	4 00
12.	3d best do., Mrs. Francis Leslie, Dearborn,	2 00
203.	Best 10 yards flannel, Mrs. D. Woolsey, Marshall,	5 00
13.	2d best do., Mrs. Francis Leslie, Dearborn,	4 00
193.	3d best do., Mrs. F. Gaines, Dearborn,	2 00
81.	Best 10 yards woolen cloth, Mrs. H. Finney, Redford,	5 00
186.	2d best do., Miss A. G. Becker, Redford,	4 00
230.	3d best do., Mrs. J. Hardsell, Pontiac,	2 00
235.	Best 10 yards woolen carpet, Mrs. Mary Castle, Bennington,	5 00
226.	2d best do., Mrs. J. Hardsell, Pontiac,	3 00
168.	Best hearth rug, Mrs. Wm. Moore, Adrian,	3 00
169.	2d best do., Mrs. Wm. Moore, Adrian,	2 00
156.	3d best do., Mrs. John Thomas, Oxford,	1 00
227.	Best 10 yards rag carpet, Mrs. J. Hardsell, Pontiac,	3 00
99.	2d best do., Wm. Henrich, Detroit,	2 00
82.	3d best do., Mrs. Hepsebeth Finney, Redford,	1 00
92.	Best white quilt, Mrs. Harriet Webster, Detroit,	4 00
151.	2d best do., Mrs. O. Morse, Brighton,	3 00
183.	3d best do., Mrs. A. L. Sherwood, Detroit,	2 00
6.	Best pair woolen knit stockings, Mrs. Calvin Pierce, Disco,	2 00
215.	2d best do., Mrs. James Bayley, Troy,	1 00
204.	Best woolen knit socks, Mrs. D. Woolsey, Marshall,	2 00
83.	2d best do., Mrs. Hepsebeth Finney, Redford,	1 00
146.	Best pair woolen knit mittens, Mrs. G. W. Collins, Farmington,	2 00
154.	2d best do., Mrs. J. Thomas, Oxford,	1 00

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Entry.		
86.	Best woolen coverlet, Mrs. Abigal Brink, Wayne,.....	$4 00
182.	2d best do., Mrs. Philo Parsons, Detroit,.....	3 00
223.	3d best do., Miss S. S. Porter, Romeo,.....	1 00
221.	Best piece of broadcloth, Miss E. M. Perry, Ray,.....	3 00
184.	2d best do., Miss A. G. Becker, Redford,.....	1 00
189.	Best woolen shawl, Miss A. G. Becker, Redford,.....	4 00
89.	2d best do., Mrs. Abigal Brink, Wayne,.....	3 00
120.	Best silk quilt, Mrs. John Starkweather, Ypsilanti,.....	3 00
68.	2d best do., Miss B. Briscoe, Detroit,.....	1 00
184.	Best patch work quilt, Miss Louisa Kelsey, Detroit,.....	4 00
220.	2d best do., Miss E. M. Perry, Ray,.....	3 00
219.	3d best do., Miss E. M. Perry, Ray,.....	2 00
4.	Best sample woolen yarn, not less than 1 lb., Mrs. Calvin Pierce, Disco,.....	3 00
121.	Best pair knit cotton stockings, Mrs. John Starkweather, Ypsilanti,.....	2 00
199.	Best knit linen stockings, D. B. Smith, Farmington,.....	2 00
275.	Best knit coverlet, (white,) Mrs. Lucy Glass, Livonia, ...	2 00
133.	2d best do., Mrs. R. Kendrick, Detroit,.....	1 00
16.	Best pair woolen sheets, Miss Delia Harris, Redford, ...	2 00
84.	2d best do., Mrs. Hepsebeth Finney, Redford,	1 00
119.	Best table cover, Mrs. M. Hadmer, Detroit,...	2 00

MRS. M. H. WEBSTER,
W. H. MONTGOMERY,
Committee.

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CLASS II.

Factory Made.

The Committee on Class 2, of Domestic Manufactures, report that they have made the following awards:

Entry.

74. 1 piece drab doeskin, Davis & Hibbard, Milford, ...Dip. and $2 00
76. 1 piece black cassimere, Davis & Hibbard, Milford, ...Dip. and 2 00
79. 1 piece all-wool tweed, Davis & Hibbard, Milford, ...Dip. and 3 00
93. 1 silk and cashmere shirt, J. Waterfield, Austin, ...Dip. and 2 00
95. 1 pair silk cashmere stockings, J. Waterfield, Austin, ...Dip. and 2 00
96. 4 pair silk and cashmere gloves, J. Waterfield, Austin, ... 1 00
97. 1 pair silk mits, James Waterfield, Austin, ... 1 00
98. Pair cotton stockings, J. Waterfield, Austin, .. 2 00
99. 1 pair silk stockings, Jas. Waterfield, Austin, . 2 00
100. 11 pieces Brussels carpet, Nall & Duncklee, Detroit, ...Dip. and 5 00
101. 3 pieces 3 ply carpet, Nall & Duncklee, Detroit, ...Dip. and 5 00
102. 2 pieces 2 ply carpet, Nall & Duncklee, Detroit, ...Dip. and 5 00
103. 1 piece masonic carpet, Nall & Duncklee, Detroit, ...Dip. and 5 00
104. 1 dog rug, Nall & Duncklee, Detroit, ...Diploma.
105. 1 lion rug, Nall & Duncklee, Detroit, ... "
106. 2 stag rugs, Nall & Duncklee, Detroit, ... "
107. 3 pieces oil cloth, Nall & Duncklee, Detroit, . "
108. 1 set lace curtains, Nall & Duncklee, Detroit, "
109. 5 rolls paper, Nall & Duncklee, Detroit, ... "
110. 1 piece cocoa matting, Nall & Duncklee, Detroit, ... "

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Entry.

111. 1 gilt shade, Nall & Duncklee, Detroit,.....Diploma.
112. 2 pieces stair oil cloth, Nall & Duncklee, Detroit,..... "
113. 2 Adelaide mats, Nall & Duncklee, Detroit,. "
114. 2 sheep mats, Nall & Duncklee, Detroit,.... "
139. 3 pieces black doeskins, H. C. Kilborn, Detroit,.....Dip. and 5 00
137. 2 pieces light gray cassimere, H. C. Kilborn, Detroit,.....Dip. and 5 00
138. 8 pieces union, H. C. Kilborn, Detroit,. Dip. and 5 00
139. 2 pieces fancy all wool, H. C. Kilborn, Detroit,.....Dip. and 5 00
144. 1 case golden frill shirts, Joseph H. Eagle, Detroit,.....Dip. and 3 00
149. 1 woolen shirt, James Waterfield, Austin,..Diploma.
274. 1 pair white blankets, J. Burns & Co., Detroit,..... "
152. 1 woolen coverlid, John Allen, Plymouth,.. "

A. S. WILLIAMS,
D. CLARKSON,
E. C. GOODRICH,
Committee.

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CLASS III.

Domestic Manufactures.

The Committee on Class 3, of Domestic Manufactures, report:

240. Best cow hide boots, Burdick & Hawley, Kalamazoo,..... $3 00
159. Best pair calf boots, Michael Martz, Detroit,.. 3 00
160. 2d best do., Michael Martz, Detroit,..... 2 00
171. Best pair of ladies slippers, C. D. Hanscom, Kalamazoo,..... 2 00
172. Pair of calf bootees, C. D. Hanscom, Kalamazoo, 2 00

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Entry.

69. 2d best 6 calf skins, D. D. Wallace, Saline,.... $4 00
Best sample leather, D. D. Wallace, Saline,. Diploma.
277. Best overcoat, J. Humphrey, Detroit,..... 4 00
273. Best fur hat, J. T. Smith, Detroit,..... 2 00
273. 2d best do., J. T. Smith, Detroit,..... 1 00
278. 1 ladies cloak, J. Humphrey, Detroit,.....Diploma.
241. 1 pr. kip boots,* Burdick & Hawley, Kalamazoo, 3 00
1. 2 pr. wood sole shoes, J. G. Kimball, Boston,. Diploma.
72. 1 package samples sheep morocco, D. D. Wallace, Saline,.....Diploma.
127. 1 pair Napoleon boots, Michael Martz, Detroit,..... "
79. 2 pairs ladies gaiters, C. D. Hanscom, Kalamazoo,.....Medal.

The specimens of ladies boot and shoe works, exhibited by C. H. Hanscom, of Kalamazoo, are most perfect and beautiful specimens of workmanship, and are fully equal to the best work manufactured in any part of the world; particularly the ladies cork sole boots, which are a splendid article, and for which a medal is recommended.

The works of Burdick & Hawley, of Kalamazoo, are superior for strength and durability, and deserve a favorable notice.

Michael Martz, of Detroit, has some men's calf boots, equal to the best French work.

D. D. Wallace, of Saline, exhibits some specimens of tanning of superior quality, and equal to the best French.

A specimen of calf skins exhibited by H. S. Bishop, Esq., of Cleveland, (too late to be entered,) tanned by Johnson's process, of which may-weed is said to be the principal tanning material used, was a very fine specimen of leather, and would trouble the best judges to distin-

* Discretionary, awarded by the Committee.

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guish it from the best French, it being equally soft and pliable; we would recommend a diploma.

S. P. WILCOX, Detroit,
L. WILCOX, Jackson,
Committee.

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CLASS IV.

Domestic Manufactures.

The Committee on Class 4, of Domestic Manufactures, report:

Entry.		
161.	Best 2 horse carriage, top, Reubche & Co., Detroit,	$10 00
127.	2d best do., W. Y. Baker, Detroit,	6 00
14.	Best 1 horse carriage, top, M. M. Gisler, Detroit,	8 00
39.	2d best do., Stewart Moore, Detroit,	5 00
36.	Best 2 horse open carriage, Stewart Moore, Detroit,	5 00
41.	Best 1 horse open carriage, Stewart Moore, Detroit,	4 00
28.	Best bedstead, H. Webber, Detroit, Dip. and	2 00
29.	Best bureau, H. Webber, Detroit, "	5 00
31.	Best table, Henry Webber, Detroit,	5 00
123.	Best rocking chair, Chas. Engel, Detroit,	2 00
256.	Best set of horse shoes and skeleton leg on, J. B. Dickenson, Ypsilanti, Dip. and	2 00
256.	Best set of horse shoes, J. B. Dickenson, Ypsilanti, Dip. and	2 00
49.	Best lot chisels, B. B. & W. R. Noyes, Detroit, Dip. and	3 00
49.	2d best do., B. B. & W. R. Noyes, Detroit,	3 00
49.	Best lot of edge tools manufactured at one establishment, B. B. & W. R. Noyes, Detroit,	5 00
45.	Best lot augers, B. B. & W. R. Noyes, Detroit,	3 00

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Entry.

26. Best cook stove, W. H. Teft & Co., Detroit, Diploma.

27. Best parlor stove, W. H. Teft & Co., Detroit, "

No. 29, Henry Webber, of Detroit, "1 rosewood book case," committee recommended as worthy of notice of the Executive Committee, and would recommend premium.

Also one gothic chair, No. 32. Also one reclining chair, No. 33.

No. 59, Wm. Tobin, of Detroit, has 1 hunting rifle; 1 rifle and shot gun; No. 62, 1 double shooting rifle, to which the committee would recommend a Diploma.

No. 128, C. & P. Mellus, of Detroit, has one circular saw and plate, for which the committee would recommend a discretionary premium.

No. 237, P. G. Johnston, of Greenville, has one set of buggy wheels, with Sanborn's patent hubs and shaft couplings, for which the committee would recommend discretionary premiums.

ALLEN D. SHADBOLT,
E. ARNOLD,
J. V. WAKEMAN,
Committee.

DIVISION F.

CLASS I.

Paintings, Drawings, Daguerreotypes and Musical Instruments.

The Committee on Class 1, of Division F, report that they have made the following awards:

Entry.

113. Best painting in oil, H. Harting, Grand Rapids, ... Dip. and $5 00

60. 2d best do., E. St. Alary, Detroit, ... " 4 00

78 to 81. Best collection of daguerreotypes, M. Sutton, Detroit, ... Dip. and 5 00

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Entry.

77. Best pair photographs, M. Sutton, Detroit,..Diploma.
62. Best colored crayoning, E. St. Alary, Detroit, Diploma and..... $5 00
91. 2d best do., E. St. Alary, Detroit,..... 3 00
2. Best drawing, plain crayon, E. VanDyke, Detroit,..... .....Dip. and 2 00
2d best do., Hattie Farrar, Detroit,..... 1 00
Best specimen penmanship, M. E. Barrett, Detroit,.....Dip. and 2 00
2d best do., M. E. Barrett, Detroit,..... 1 00
111. Best specimen graining on wood,* Wright & Hill, Detroit,.....Diploma.
Best mirror frames, ornamental pier and oval, Atkinson & Co., Detroit,.....Diploma.
85 to 92. Best collection of picture frames, A. Elder, Detroit,.....Diploma.
64. Best grand action concert piano, 3 strings, Stein & Bucheister, Detroit,.....Dip. and 5 00
167. Best piano, (parlor grand,) 2 strings, Amsden & Cargill, Detroit,.....Diploma.
15. Best melodeon, (double reed,) Simmons & Whitney, Detroit,.....Dip. and 3 00
2d best do., (single reed,) Simmons & Whitney, Detroit,..... 2 00

Miscellaneous.

This Class embraces a wide variety of useful and ingenious specimens of art, which ought not to be passed over silently, but upon these the committee are not authorized to award Diplomas. Still they cannot forbear giving some of the most conspicuous a passing notice in this their report for discretionary premiums.

Model of locomotive by P. R. Rodier, of Detroit, a lad.

Fine toned parlor organ, neat and plain, John Fapset.

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* Seven in number, imitation of oak, birdseye maple, mahogany, wainscott walnut, walnut root, and African wood; the birdseye maple chiefly worthy of notice for novelty and delicacy of shade.

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Beautiful specimen of hair work (horse hair) in flower designs, by Mrs. Wm. Merritt, Detroit.

Bouquet of hair work by Miss Mary Schonaker, Detroit.

Several specimens of the style of art known as oriental painting by Miss Theresa White, of Detroit.

Large case stuffed birds, an exquisite collection, well preserved, and handsomely grouped, by A. Hine, Ypsilanti.

Model of an ornamental portico, by James Stewart, Detroit.

A beautiful worked leather frame, containing various designs and combinations of hair delicately and tastefully arranged, by Mrs. J. B. King, Detroit.

Hair head dress by Miss A. S. Sherwood, Detroit.

Mr. John D. Fairbanks, Detroit, contributed a variety of foreign birds, among which the committee observed a beautiful pair of Ceylon and another of Golden Pheasants. These birds are of great rarity and added much interest to the exhibition in this department. It is worthy of notice that the Ceylon pheasants and other varieties of eastern game birds are now being imported into England for the purpose of supplying the deficiency and adding rarity to the home stock of game.

In this connection, the committee would state that, although the Society had appropriated handsome premiums for designs for the best farm-houses and rural buildings, yet no one appeared to compete for the same. Would it not, therefore, be well, in order to induce artists to enlist for the prizes, to increase the amount offered somewhat. These designs require labor and expense from a class of men little able to expend them, and require special encouragement in a new State like our own, where, as a matter of fact, little attention is given, for the want of cheap designs, to the architectural style and arrangement of the farmer's home and out-buildings.

The committee would not deem their duty performed without making special mention of the convenient struc-

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ture, design and adornment of Flora's Hall, adding very much, in their opinion, to facility for exhibiting the various articles and the attractiveness of the Fair. They would also commend the liberality of the citizens of Detroit in loaning to the Society, for the better embellishment of the hall, many rare and valuable specimens of art, contributing greatly, both to the gratification of the taste of all interested or aspiring to an acquaintance with the fine arts. And for the arrangement of this particular portion of the exhibition, the Society is largely indebted to the good taste and honorable zeal of Mr. E. St. Alary and his associates, who have devoted a large amount of time to this work.

O. B. WILCOX,
D. BETHUNE DUFFIELD,
Committee.

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CLASS II.

Needle, Shell and Wax Work.

The Committee report that they have made the following awards of premiums in the Class for Needle, Shell and Wax Work:

Entry.		
164.	Best ornamental needle-work, Miss Anna Lanigan, Detroit,	$3 00
56.	2d best do., Miss Amanda Morton, Ypsilanti,	2 00
117.	3d best do., Miss Emma Sheley, Detroit,	1 00
119.	Best ottoman cover, Miss Chase, Detroit,	3 00
56.	2d best do., Miss Amanda Morton, Ypsilanti,	2 00
176.	3d best do., Miss C. G. Durkee, Pontiac,	1 00
68.	Best table cover, Miss Mary Watson, Detroit,	3 00
13.	Best group flowers, Miss E. W. Fowler, Detroit,	3 00
110.	2d best do., Miss H. Schonacker, Detroit,	2 00
121.	2d best do., Miss A. S. Clarke, Detroit,	1 00
129.	Best fancy chair work, Mrs. N. R. Seaver, Ypsilanti,	3 00

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Entry:

200. 2d best do., Mrs. A. S. Johnson, Detroit,..... $2 00
198. 3d best do., Mrs. A. A. Fish, Detroit,..... 1 00
104. Best specimen worsted work, Mrs. Wm. Hale, Detroit, ... 3 00
109. 2d best do., Miss H. Schonacker, Detroit,..... 2 00
43. 3d best do., Mrs. A. E. Bartholomew, Detroit, 1 00
115. Best worked collar, Mrs. J. Starkweather, Ypsilanti,..... 3 00
126. 2d best do., Miss Farrar, Detroit,..... 2 00
19. 3d best do., Mrs. Mary Croushaw, Detroit,.... 1 00
186. Best silk bonnet, Mrs. J. J. Norris, Detroit,.. 3 00
190. 2d best do., Mrs. E. James, Detroit,..... 2 00
209. Best lace cap, Mrs. B. Brisco, Detroit,..... 3 00
210. 2d best do. " " 2 00
199. Best 2 lamp mats, Mrs. R. R. Bass, Albion,... 2 00
185. 2d best do., Mrs. Smith, Ypsilanti,..... 1 00
146. Best ornamental shell work, Mrs. Hoffner, Detroit,..... 3 00
148. 2d best do., Mrs. E. Perkins, Birmingham,.... 2 00
152. Best specimen wax flowers, Miss L. C. Dolio, Detroit,..... 3 00
99. 2d best do., Miss Theresa White, Detroit,.... 2 00
44. Best specimen artificial flowers, other than wax, Mrs. A. E. Bartholomew, Detroit,..... 3 00
179. Best crochet work, other than quilt, Mrs. Strelonger, Detroit,..... 3 00
112. 2d best do., Mrs. S. Stetson, Detroit,..... 2 00
162. 3d best do., Mrs. Wm. Hale, Detroit,..... 1 00

There are 211 entries in this department; a large number of articles worthy of notice, are not properly embraced in the regular list; to such the committee have recommended discretionary premiums. It has been very difficult to determine the comparative merits of many articles of the same kind.

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The committee recommend the following as deserving of notice and award:

Entry.

No. 3. Henrietta L. Farnsworth, Detroit, 1 white pin cushion, embroidered with chenele, Diploma.

No. 10. E. W. Flint, Detroit, 3 stamped skirts, Diploma.

No. 46. A. E. Bartholomew, Detroit, lot of embroidered (stamped) patterns, Diploma.

No. 47. Miss Hattie Farrar, Detroit, Nos. 47, 48, 49, 50, 51, 52, 53, 54, Diploma.

No. 84. Mrs. C. Norris, Detroit, embroidered skirt, Diploma.

No. 114. Geo. Shufflebotham, Detroit, 2 cases wax fruit.

No. 124. Miss Avis Clark, Detroit, needle work, Diploma.

No. 125. Miss Farrar, Detroit, child's dress, special notice, Diploma.

No. 133. Godfrey Stanton, Detroit, embroidery, Transactions.

No. 147. Mrs. E. W. Flint, Detroit, pin cushion and mat, special notice, Diploma.

No. 150. Thos. Higgins, Detroit, ornamental needle work, Diploma.

No. 153. Miss L. C. Bolio, Detroit, 5 baskets wax fruits, special notice, and Diploma.

No. 159. Mrs. E. Bagg, Detroit, embroidered toilet cover and cushion, Diploma.

No. 184. Miss Hannah Ezekiel, Detroit, 1 case wax fruit, Diploma.

No. 206. Miss S. B. King, Detroit, worked frame and hair wreath, Transactions.

No. 14. Mrs. Wm. Merritt, Detroit, horse hair ladies' head dress, Diploma.

No. 59. Miss Amanda Morton, Ypsilanti, embroidered silk scarf, Diploma.

No. 108. Miss H. Schonacker, Detroit, 1 bouquet artificial flowers, Diploma.

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Entry.

No. 116. Mrs. Rose, Detroit, leather work what not, Diploma.

No. 144. Miss Hoffner, Detroit, specimen needle work, Diploma.

No. 149. Mrs. A. S. Sherwood, Detroit, 1 specimen hair work, Diploma.

No. 173. Miss Ellen Perry, Ray, 2 lamp mats, Diploma.

No. 211. Miss B. Briscoe, Detroit, 1 pair embroidered suspenders, Diploma.

No. 56. Miss Amanda Morton, embroidered ottoman, Diploma.

No. 183. Miss Henrietta L. Farnsworth, Detroit, embroidered night robe, Diploma.

No. 9. Miss H. Humphrey, Detroit, embroidered skirt, Diploma.

REV. D. C. JACOKES,
MRS. J. M. STARKWEATHER,
MRS. JOHN ROGERS,
MISS MARY H. WHEELER,
Committee.

DIVISION G.

CLASS I.

Flowers.

The Committee on Flowers respectfully report the following as their decision:

Entry.

27. Best and greatest variety of cut flowers, professional, John Ford, Detroit,..... $3 00
239. Best and greatest variety of cut flowers, amateur, Benj. McCreary, Detroit,..... 3 00
265. 2d best do., S. Bowerman, Detroit,..... 2 00
206. Best and greatest variety of dahlias, William Adair, Detroit,..... 3 00

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Entry.		
28.	2d best do., John Ford, Detroit,.....	$2 00
68.	Best 12 dissimilar blooms dahlias, Hubbard & Davis, Detroit,.....	3 00
194.	2d best do., Jno. Puigh, Detroit,.....	2 00
69.	Best single variety of dahlias, Hubbard & Davis, Detroit,.....	2 00
208.	2d best do., Wm. Adair, Detroit,.....	1 00
317.	Best and greatest variety roses, Hubbard & Davis, Detroit,.....	3 00
209.	2d best do., Wm. Adair, Detroit,.....	2 00
71.	Best 12 dissimilar blooms roses, Hubbard & Davis, Detroit,.....	2 00
32.	Best and greatest variety phloxes, Jno. Ford, Detroit,.....	3 00
164.	2d best do., Bela Hubbard, Detroit,.....	2 00
33.	Best seedling phloxes, Jno. Ford, Detroit,....	2 00
210.	Best and greatest variety verbenas, William Adair, Detroit,.....	2 00
193.	2d best do., John Puigh, Detroit,.....	1 00
74.	Best seedling verbenas, Hubbard & Davis, Detroit,.....	2 00
303.	Best and greatest indigenous plants, Mrs. J. Starkweather, Ypsilanti,.....	3 00
114.	2d best do., Mrs. E. Perkins, Birmingham, ...	2 00
36.	Best collection green house plants, Jno. Ford, Detroit,.....	5 00
205.	2d best do., Wm. Adair, Detroit,.....	3 00
37.	Best collection German asters, John Ford, Detroit,.....	2 00
77.	2d best do., Hubbard & Davis, Detroit,.....	1 00
213.	Best hand bouquet, round, Wm. Adair, Detroit,	2 00
195.	2d best do., John Puigh, Detroit,.....	1 00
214.	Best hand bouquet, flat, Wm. Adair, Detroit,.	5 00
40.	Best basket flowers with handle, John Ford, Detroit,.....	2 00

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Entry.

271. 2d best do., Wm. Adair, Detroit,..... $1 00
320. Best and most beautifully arranged basket of flowers, Mrs. E. C. Walker, Detroit,..... 2 00
278. Best floral design, E. F. Haskell, Monroe,..... 2 00
236. 2d best do., Mrs. H. S. Sherwood, Detroit,.... 1 00
212. Best floral ornament, Wm. Adair,..... 2 00

290. The committee would recommend a discretionary premium, for a pyramid of verbenas, to Mrs. E. F. Haskell, of Monroe, of $2.

Also to No. 171, a vase chrystalized grasses, of $3.

Also Nos. 314 and 315, two very handsome round bouquets, Mrs. A. Bradner, of Plymouth, $2.

Also 225, one large bouquet, Mrs. R. Stead, Detroit, $2.

Also for the fine green house plants exhibited by Mrs. E. C. Walker, Detroit, $3.

M. HOWARD WEBSTER,
Chairman.

CLASS II.

Fruits.

The Committee on Apples report that they have made the following awards to exhibitors:

Entry.

136. Best and greatest variety of winter apples, D. Clarkson, agent, Northville,..... $4 00
54. 2d best do., Ama Power, Livonia,..... 2 00
142. 3d best do., Joshua Simmons, Farmington,.... 1 00
143. Best and greatest variety autumn apples, J. Simmons, Farmington,..... 4 00
52. 2d best do., Ama Power, Livonia,..... 2 00
138. Best 12 specimens single variety winter apples, D. Clarkson, agent, Northville,..... 3 00
145. 2d best do., Joshua Simmons, Farmington,.... 2 00
156. 3d best do., Thos. Blackett, Roseville,..... 1 00

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Entry.		
146.	Best 12 specimens single variety autumn apples, Joshua Simmons, Farmington,.....	$3 00
158.	3d best do., Thos. Blackett, Roseville,.....	1 00
121.	Best 12 specimens single variety summer apples, D. Clarkson, Northville,.....	3 00
199.	Best 3 specimens seedling winter apples, J. Simmons, Farmington, Complete Farmer, American Gardener and.....	2 00
230.	Best 3 specimens seedling autumn apples, D. Clarkson, Northville, Thomas' Fruit Book and.....	2 00
135.	Best and greatest variety good table apples, D. Clarkson, Northville,.....	5 00
155.	2d best do., Thos. Blackett, Roseville, Thomas' Fruit Book and.....	3 00
240.	Best collection of plums, Benj. McCreary, Detroit,.....	3 00
186.	2d best plums, choice varieties, yellow egg, Mrs. R. Kearsley, Detroit,.....	1 00
302.	Best 12 quinces, Alex. Waters, Troy,.....	3 00
235.	2d best do., E. Perkins, Birmingham,.....	2 00
108.	3d best do., Mrs. H. Hallock, Detroit,.....	1 00
237.	Best and most extensive collection of native grapes grown in the open air, Jno. Hatcher, Detroit,.....	3 00
250.	2d best do., W. Bour, Detroit,.....	2 00
106.	Best and most extensive collection of foreign grapes grown in open air, Mrs. H. Hallock, Detroit,.....	
45.	2d best do., W. Bour, Detroit,.....	
275.	2d best and most extensive collection of foreign grapes grown under glass, Jno. Roberts, Detroit,.....	2 00
25.	Best 2 specimens water melons, Jno. Ford, Detroit,.....	2 00

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Entry.

168. 2d best do., Bela Hubbard, Detroit,..... $1 00

169. Best 4 specimens nutmeg melon, Bela Hubbard, Detroit,..... 2 00

26. 2d best do., Jno. Ford, Detroit,..... 1 00

Professional.

254. Best 12 specimens single variety winter apples, I. E. Ilgenfritz, Monroe,.....Dip. and 2 00

255. Best 12 specimens single variety autumn apples, I. E. Ilgenfritz, Monroe,.....Dip. and 2 00

256. Best 12 specimens single variety summer apples, I. E. Ilgenfritz, Monroe.....Dip. and 2 00

257. Best seedling winter apples, I. E. Ilgenfritz, Monroe,.....Dip. and 2 00

258. Best variety summer apples, I. E. Ilgenfritz, Monroe,.....Dip. and 2 00

259. Best variety autumn apples, I. E. Ilgenfritz, Monroe,.....Dip. and 2 00

41. Best 12 specimens winter greenings, Ama Power,.....Discretionary.

197. Best cluster native grapes grown in open air, Mrs. H. Hallock, Detroit,.....Discretionary.

Your committee recommend that a first class premium be awarded to Geo. Kelley, of Kelley's Island, for the best variety of native grapes.

H. ALCOTT,
Chairman.

CLASS III.

Pears—Amateur.

The Committee on Pears report that they have made the following awards:

Entry.

62. Best and greatest variety of pears, named and labeled, grown by exhibitor, Rev. M. H. Hunter, Grosse Isle, Text Book of Agriculture and..... $4 00

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Entry.

277. 2d best do., Jno. Roberts, Detroit,..... $3 00
242. 3d best do., Benj. McCreary, Detroit,..... 2 00
160. Best collection of autumn pears, named and labeled, grown by exhibitor, Thos. Blackett, Roseville,..Landscape Gardening and Architecture.
277. 2d best do., Jno. Roberts, Detroit,....Horticulturist.
191. Best seedling pears, with history and description, Wm. L. Woodbrige, Detroit,..... 3 00
62. Best 6 specimens autumn pears, Rev. M. H. Hunter, Grosse Isle,..... 2 00
160. 2d best do., Thos. Blackett, Roseville,..... 1 00

Professional.

215. Best and greatest variety good pears, named and labeled, grown by exhibitor, Wm. Adair, Detroit,..... 4 00
260. 2d best do., I. E. Ilgenfritz, Monroe,..... 3 00
185. 3d best do., Hubbard & Davis, Detroit,..... 2 00
215. Best collection autumn pears, named and labeled, grown by exhibitor, Wm. Adair, Detroit,.....Landscape Gardening.
260. 2d best do., I. E. Ilgenfritz, Monroe,..Horticulturist.
215. Best 6 specimens autumn pears, W. Adair, Detroit,..... 3 00
260. 2d best do., I. E. Ilgenfritz, Monroe,..... 2 00
85. 3d best do., Hubbard & Davis, Detroit,..... 1 00

N. A. BALCH,
GEO. M. DEWEY,
Committee.

CLASS IV.

Miscellaneous Fruits.

The Committee on Class 4, report:

198. Best 10 specimens peaches, Joshua Simmons, Farmington,..... $4 00
205. 2d best do., W. Arnold, Dexter,..... 2 00

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The above awards are made with the consideration that the proceedings will be warrantable, although both lots are fewer in number than the Society require, but the great scarcity of the fruit renders them desirable.

Vinegars, wines, &c., referred to the committee, have been examined, but we find no provision made for premiums, nor yet any sufficient means of determining the relative strengths of the vinegars, or for detecting deleterious compounds. They have, therefore, expressed their relative value as nearly as the committee are able to determine, classifying them according to their composition and manufacture, and refer the whole matter to the Executive Committee.

Vinegars.

Entry.

99. Keg vinegar made by slow process, Wm. Peek, Detroit,.....Diploma.

7. Bbl. double extract of vinegar, quick process, J. Frankel, Detroit,.....Diploma.

8. Bbl do., J. Frankel, Detroit,.....Diploma.

9. Bbl. table vinegar, J. Frankel, Detroit,....Diploma.

3 grades similar quality, flavor less perfect than 69, although more concentrated.

101. Bottle red wine vinegar, J. Frankel, Detroit, Diploma.

3. Bottle white wine vinegar, A. Landsberg, Detroit, ...Diploma.

4. Bottle pure cider vinegar, A. Landsberg, Detroit, ...Diploma.

5. Bottle malt vinegar, A. Landsberg, Detroit,.Diploma.

6. Bottle spirit of vine, A. Landsberg, Detroit,.Diploma.

The above four were only second to the others by the same process.

103. Bottle currant wine, Mrs. Jno. Palmer, Detroit, Discretionary.

2 bottles currant wine, Mrs. J. Roberts, Detroit,..... .....Discretionary.

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Entry.

113. 2 bottles currant wine, Mrs. E. Perkins, Birmingham, ...Discretionary.

122. 2 bottles Isabella grape wine, Geo. Kelley, Kelley's Island, ...Discretionary.

284. 1 bottle grape wine, Mrs. E. F. Haskell, Monroe, ...Discretionary.

112. 1 bottle wild grape wine, Mrs. E. Perkins, Birmingham, ...Discretionary.

102. Blackberry wine for cooking, Mrs. Jno. Palmer, Detroit, ...Discretionary.

111. Bottle catsup, good, Mrs. W. A. Bacon, Detroit, ...Discretionary.

The Committee have found the articles distributed through the several departments, and in many cases being tampered with to such an extent as seriously to interfere with their means of forming a satisfactory judgment. This seems to arise from the fact that no facilities or premiums are provided for a large class of articles such as have been given in charge to this committee.

T. T. LYON,
Chairman.

CLASS V.

Vegetables.

The Committee on Vegetables report the following as the awards made by them :

Entry.

10. Best and greatest variety culinary vegetables, Jno. Ford, Detroit, ... $4 00

152. Best 12 blood beets, T. Hopson, Detroit, ... 2 00

290. Best 6 heads cauliflowers, Hubbard & Davis, Detroit, ... 2 00

299. Best cabbage, R. Stead, Detroit, ... 2 00

308. Best 12 carrots, Wm. Adair, Detroit, ... 2 00

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Entry.

16. Best 6 vegetable eggs, Jno. Ford, Detroit,.... $2 00
87. Best ½ peck white onions, Hubbard & Davis, Detroit,..... 2 00
127. 2d best do., yellow onions, A. Wood, Livonia,. 1 00
219. Best ½ peck red onions, W. Adair, Detroit,... 2 00
19. Best ½ peck yellow onions, Jno. Ford, Detroit, 2 00
133. Best peck seedling potatoes, D. Clarkson, Northville,..... 2 00
54. Best peck table potatoes, A. D. Power, Farmington,..... 2 00
109. 2d best do., R. R. Briggs, Romeo,..... 1 00
58. Best crook neck squash, H. W. Dean, Detroit, 1 00
234. Best three vegetable narrow squashes, Thos. Smith, Detroit,..... 1 00
97. Best squash, Jno. F. Hambroger, Detroit,.... 1 00
21. Best ½ peck tomatoes, Jno. Ford, Detroit,.... 1 00
159. 2d best do., T. Hopson, Detroit,.....Discretionary.
270. Best 12 roots salsify, Wm. Adair, Detroit,.... 1 00
178. Best peck white turnips, Bela Hubbard, Detroit,..... 1 00
22. Best ½ peck lima beans, John Ford, Detroit,.. 1 00
92. 2d best do., Hubbard & Davis, Detroit,..Discret'ary.
23. Best peck sweet potatoes, Jno. Ford, Detroit,. 1 00
219. Best 6 stalks rhubarb, Wm. Adair, Detroit,... 1 00
89. 2d best 3 autumnal squashes, Hubbard & Davis, Detroit,.....Discretionary.
125. 2d best ½ peck red onions, A. Ford, Livonia, "
293. 2d best 6 drum head cabbage, Thos. Leadbeater, Detroit,.....Discretionary.
300. Best three Boston marrow squashes, R. Stead, Detroit,..... 1 00

Savoy's belonging to Robert Stead, are worthy of a first premium, being perfectly pure and ought to be more cultivated.

Celery is not worthy a premium unless blanched.

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Parsnips not worthy a premium, being stringy and poor, not having been thinned out.

There are vegetables that are larger than those awarded but they are coarser in texture than those we have selected as worthy of premiums.

All those Discretionary premiums we have awarded ought to be paid as there were doubts as to which were the best.

Mr. Gardner, of Detroit, has furnished a fine collection of seeds, which being the sheet anchor of horticulture and agriculture, and being, as the subscriber knows, imported from the first houses in Europe, ought to have a Diploma. Also a variety of plates of plants grown from seeds exhibited.

As regards potatoes we have not been governed by *size* but by texture.

Red cabbage exhibited by R. Stead, Detroit, is every way worthy of a first premium, being very fine and much needed as a winter pickle, and ought to be more extensively cultivated.

The Committee also consider that the show of vegetables is very poor on account of the meager list of premiums.

GEORGE CRABB,
Chairman.

DIVISION H.

Grain, Flour and Seeds.

The Committee on Grain, Flour and Seeds report as follows:

Entry.		
56.	Best sample winter wheat, Wm. Dougherty, Berrien Springs,	$5 00
32.	2d best do., J. B. Springer, Farmington,	3 00
57.	3d best do., Wm. Dougherty, Berrien Springs,	2 00

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Entry.

71. Best sample spring wheat, W. H. Stout, Troy, $2 00
61. 2d best do., T. A. Parker, Detroit,.....
34. Best sample yellow corn, J. B. Springer, Farmington..... 5 00
33. Best sample of white corn, J. B. Springer, Farmington,..... 5 00
4. 2d best do., J. S. Tibbitts, Plymouth,..... 3 00
87. Best sample of dent corn, Wm. A. Hall, Clinton, ... 5 00
3. 2d best do., J. S. Tibbitts, Plymouth,..... 3 00
45. Best sample black oats, Geo. Ford, Greenfield, 3 00
35. 2d best do., J. B. Springer, Farmington,..... 2 00
73. Best sample white oats, John Allen, Plymouth, 3 00
67. 2d best do., Wm. H. Stout, Troy,..... 2 00
75. Best 12 ears white seed corn, Orson Ingles, Almont,..... 1 00
88. Best 12 ears dent seed corn, W. A. Hall, Clinton, ... 1 00
5. Best sample rye, J. S. Tibbitts, Plymouth,.... 3 00
60. Best 2 bushels beans, T. A. Parker, Detroit,..
78. 2d best do., Chas. M. Bowen, Lima,..... 3 00
58. Best 2 bushels peas, T. A. Parker, Detroit,...
59. 2d best do., " " ...
62. Best 1 bushel large clover seed, T. A. Parker, Detroit,.....
40. Best 1 bushel small clover seed, D. Clarkson, Northville, ... 3 00
53. Best 1 bushel timothy seed, A. Hendry, Redford,..... 5 00
101. 2d best do., A. Wattles, Troy,..... 4 00
64. 3d best do., T. A. Parker, Detroit,..... 3 00
27. Best barrel flour, A. B. Matthews, Pontiac,... 4 00
28. 2d best do., A. W. Leggett, Pontiac,..... 3 00
36 & 37. Varieties of garden, flower and field seeds, M. T. Gardner & Co., Detroit, ...Discretionary.

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Entry.

38. Colored lithograph plates of flowers in gilt frames, M. T. Gardner & Co. Detroit, . Discret'ary.

36. Colored lithograph plates of vegetables, M. T. Gardner, Detroit, ... Discretionary.

S. G. ROWLEY,
WM. MORE,
Committee.

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Bread.

25.	Best 2 loaves salt or milk rising, Mrs. W. A. Bacon, Detroit, ...	$5 00
7.	2d best do., Mrs. J. H. Button, Farmington, ..	3 00
107.	Best 2 loaves yeast rising, Mrs. A. B. Mathews, Pontiac, ...	5 00
12.	2d best do., Mrs. H. W. Dean, Hamtramck, ...	3 00
15.	Best sample of corn bread, Mrs. F. Leslie, Dearborn, ...	5 00
97.	2d best do., Mrs. Augustus Day, Detroit, ...	3 00
115.	Best specimen of bread made by a Miss under eighteen years of age without assistance, with authenticated statement of manufacture accompanying, Miss Emma Smith, Detroit, Diploma and	5 00

No. 30, Mrs. E. Perkins, Birmingham, for corn bread, committee recommend a diploma.

No. 113, Mrs. R. Palmer, Detroit, for crackers made by hand, committee recommend diploma.

The committee on bread report that there was in this department a large and excellent display, the entries numbering over forty, including corn bread and crackers.

Of the salt rising there were many superior specimens, most of them accompanied by full statements of the man-

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ner of making. There were two samples, either of which might have taken a prize, but for the neglect of the makers to state the manner of making; one by Mrs. G. Gage, of Dover, Lenawee County, was of superior quality. The four beautiful loaves contributed by Mrs. J. S. Tibbits and her daughter, of Plymouth, were much admired for their whiteness, and both to them and to Mrs. Gage the committee would recommend discretionary premiums.

The specimens offered by Misses under eighteen years of age were generally of good quality, most of them above the average made by ordinary housekeepers of much more experience. The committee particularly commend the loaves exhibited by Miss C. E. Tibbits, Miss Addie Swan, Miss J. M. Cushway and Miss Anna Clark.

The samples of yeast bread were not as commendable on the whole as those of salt or milk rising, some of them lacking in moisture and lightness, and others tasting too strongly of the yeast. The best sample offered was by Alice Higgins, of Detroit, but it could not take any premium because there was but *one* loaf and no written statement—two loaves being required by the rules. There were several better specimens than the one to which was awarded the second prize, but being unaccompanied by descriptions of manner of making they did not come within the rules, and were not entitled to compete with those which did.

The corn bread offered was generally of excellent quality, but most of it being one-third or one-fourth wheat flour could not come in competition with pure corn bread. The committee especially commend to notice the two loaves exhibited by Mrs. E. Perkins, of Birmingham.

No premium was offered for crackers, but the committee recommend a Diploma to Mrs. R. Palmer, for hand-made crackers, the only sample offered—most excellent. Two loaves of rye bread by Mrs. Leslie, of Dearborn, were the

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only ones offered, and were of good quality—no premium given.

MRS. L. B. ADAMS,
MRS. BOWERMAN,
W. H. MONTGOMERY,
Committee.

DIVISION K.

Miscellaneous Articles.

The Committee on Miscellaneous Articles make the following report:

Entry.

139. Percussion matches, Henry Fowler, Detroit, . Diploma.
1. " " Richardson & Co., Detroit, ... Discretionary.
4. Carved marble mantle, Joseph Wanbecq, Detroit, ... Diploma.
6. Samples of soap, Detroit Chemical Soap Co., "
8. Samples of artificial stone, T. Luce, Detroit, "
12. Fairbank's patent scales, J. S. Farrand, Detroit, ... "
17. Fairbank's chronometer scales, J. S. Farrand, Detroit, ... "
27. Lillie's patent fire and burglar proof safes, S. R. Woolley, Detroit, ... "
2. Lillie's patent bank lock, S. R. Woolley, Detroit, ... "
30. Bank lock safe, S. R. Woolley, Detroit, ... "
38. 3 sizes Buth's patent animal traps, O. Bellows, Detroit, ... "
40. 5 bbls. land plaster, Joseph Law, Detroit, .. "
41. 1 bbl. calcined plaster, Marsh & Co., Sandusky, O., ... "
42. Specimens of alabaster marble, G. B. Smith, Sandusky, O., ... "

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Entry.

44. 1 case of jewelry, Fred Rolshoven, Detroit,. Diploma.
45. Lake Huron grindstone, L. B. Johnstone, Willow Creek,..... "
38. Case of gold pens, Chas. Piquette, Detroit,. "
50. Varieties of small fish, J. P. Clark, " "
51. Metalic burial caskets, J. H. Farwell, " "
55. Palmer's patent paragon planes, J. S. Vernor, Detroit,..... "
58. Equatorial sextant, Austin Burt, J. S. Vernor, Detroit,..... "
62. 2 medium ledgers, F. Raymond, Detroit,.... "
68. Singer's sewing machine, Wm. Porter, Detroit, ...2d prem.
70. Home sewing machine, H. Coon, Cleveland,. 3d prem.
72. Bellmont hydraulic cement, G. Morton, Sandusky, ...Diploma.
75. Portable gas works, Dudley & Holmes, Detroit,..... Medal.
76. Steam heater, Dudley & Holmes, Detroit,... "
79. Coal from the Detroit and Jackson mine, G. S. Frost, Detroit,.....Diploma.
78. 1 monument, A. Scnickenberger, Farmington, "
81. Dressed siding and flooring, C. G. Blindbury, Detroit,..... "
84. 3 Russia bound books, Richmond & Backus, Detroit, ... "
88. Domestic hollow ware, D. M. Pearce, Concord, O.,..... "
89. Model portico, James Stewart, Detroit,..... "
91. Specimens of wrought iron, Wyandotte Rolling Mills,..... "
93. 6 pine planks, Brooks, Adams & Co., Detroit, "
94. Old dominion coffee pot, Arthur Burnham & Gilroy, Philadelphia,..... "

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Entry.

95. Old dominion coffee pot, Arthur Burnham & Gilroy, Philadelphia,.....Diploma.
100. Arthur's board measure, Thos. Bouton, Philadelphia,..... "
102. 2 boxes mould candles, Detroit Chemical Soap Co.,..... "
103. Nonpariel blacking, John Hall, Detroit,.... "
105. Case of California gold specimens, J. Ling, Detroit,..... "
106. Iron fence posts, King & Brothers' West Andover, O.,..... ..... "
107. A fire engine hose slushing machine, Geo. C. Walker, Detroit,..... "
108. Patent station indicator and distance metre, J. R. Lillibridge,..... "
109. 1 four-oared boat, J. R. Cunningham, Detroit, "
114. Specimens of stone ware, F. S. Balsley, " "
115. Leroy brass band of N. Y., S. S. Foster, " "
116. Porcelain teeth, by the Cleveland Manufacturing Co., Whiting & Benedict, Detroit,.. "
117. 1 bale of pressed hay, John Whiting, Det.,. "
119. Wright's bedstead fastener, A. B. Taylor, Buffalo, N. Y.,..... "
120. Harrison's patent block letters for signs, A. B. Taylor, Buffalo, N. Y.,..... "
121. India rubber door mats, O. Bellows, Detroit, "
113. Broom handles, J. D. Comstock, Adrian,.... "
126. Washing machine, P. R. Rodier, Detroit,... "
127. Model railroad locomotive, P. R. Rodier, Detroit,. ..... "
139. Railroad passenger car, H. H. Brown, Det.,. "
130. Wheeler & Wilson's sewing machine, (double thread,) L. D. & H. C. Griggs, 1st prem., Detroit,..... Medal.

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Entry.

132. Weather strips for the bottom of doors, S. W. Patchin, Detroit,.....Diploma.
136. 1 tidy, Mrs. D. Woolsey, Marshall,..... "
137. Hermetically sealed cherry pie, Mrs. E. F. Haskell, Monroe,..... "
128. Gordon's fire-fly card press, Henry Barnes, Detroit,..... "
139. Fowler's percussion matches, Henry Fowler, "
142. Specimens of Grand Rapids plaster, Wm. Laraway, Grand Rapids,..... "
143. Oval edged silver plated steel head board rules, A. G. Hicks, Cleveland, O.,..... "
147. Cylinder and surface discharging water-wheel, J. A. Murray, Buffalo, N. Y., ... "
150. Patent improved safety bar styrup iron, Nathan Post, East Cleveland, O.,..... "
151. Patent improved harness buckle, Nathan Post, East Cleveland, O.,..... "
143. Miniature race boat, J. R. Cunningham, Detroit,..... "
152. Self acting farm and land gates, S. J. Sherwood, Beloit, Wis.,..... "
154. Case of insects, Chas. Gidday, Beloit, Wis., "
155. Canary birds and West India wax bill, H. H. Owens, Beloit, Wis.,..... "
156. 3 bbls. land plaster, Hovey & Co., Grand Rapids, 2d prem.,..... "
158. Continental fire engine, B. Vernor, Detroit, "
159. Patent horse collar block, B. W. McClure, Pike, N. Y.,..... "
160. Glass case of dentistry, Wm. Cahoon, Detroit,..... "
161. 1 new passenger car, with Case's patent seats and sleeping couches, M. C. R. R. Co., "

The attention of the committee was also called to seve-

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ral magnificent and highly finished passenger and freight locomotives, manufactured by the M. C. R. R. Co., at their shops in Detroit, which although not entered for premiums, were, in the opinion of the committee, entitled to especial notice.

The committee also desire to recommend as worthy of public attention many articles in regard to which they did not deem it best to bestow at this time Diplomas. Among which are the following:

M. C. R. R. Co.'s magnificent and highly finished passenger and freight locomotives, manufactured at their shops at Detroit.

J. S. Farrand, hay scales.

Ruth's patent animal traps.

G. B. Smith, alabaster marble.

S. P. Clark, variety of small fish in aquarium.

Monroe Ruben's English organ.

Old dominion coffee and tea pots.

J. D. Comstock, splendid broom handles.

Mrs. E. N. Haskell, hermetically sealed cherry pie.

Mrs. Woolsey, tidy.

S. G. PATTISON,
A. S. BERRY,
MARSH GIDDINGS,
A. N. HART,
W. H. JENNINGS,
Committee.

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Report of Simeon Davidson,

OF HIS

CROP OF CORN OFFERED FOR PREMIUM.

I hereby certify the following to be a true statement of the process and expense of raising and fitting for market, twelve acres of corn, put in and cultivated by me on my farm about 2½ miles east of the village of Tecumseh, in the township of Tecumseh, county of Lenawee, and State of Michigan, in the year 1858. The ground planted is a sandy loam. In the month of April, before plowing, I gave the ground a good dressing of long manure. Plowed it about the 20th of April, with a heavy plow, and double team, ten inches deep.

About the 10th of May, I rolled it with a heavy roller, dragged it twice, cultivated once with a cultivator, then dragged it again twice. Furrowed with a small corn plow, both ways, four feet apart, and planted it with hoes, three inches deep. I plant thus deep because I have found deep planting to be a security against the cut worm, and also against spring frosts.

I gave the corn, when about two inches high, a dressing in the hill of plaster and ashes, using about one bushel of ashes to one peck of plaster, and then cultivated it both ways, with corn cultivator, and in about two weeks afterwards went through it with a cultivator again. When the corn was about 18 inches high, I went through it both ways with a corn plow, and again about the 1st of August, as the corn was about forming ears, I went through it both ways with a large thill cultivator. This was all the labor

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bestowed upon the crop before cutting it up and harvesting.

On harvesting the above field it was found to yield an average of ninety-three bushels of shelled corn to the acre.

The expense of said crop was as follows:

Plowing, $2 per acre,	$24 00
Dragging 4 times,	12 00
Cultivating before planting,	4 00
Rolling,	3 00
Furrowing both ways,	4 00
Manure drawing,	12 00
Planting,	6 00
Labor cultivating crop,	12 00
Cutting up and putting into stouts,	6 00
Husking and shelling 1116 bushels, 6 cents per bushel,	66 96
Use of land, $3 per acre,	36 00
Whole expense of crop,	$185 96

Value of crop is as follows:

1116 bushels of shelled corn at 4s,	$558 00
Value of 12 acres of stalks,	25 00
Whole value of crop,	$583 00
Deduct expense of crop,	185 96
Nett profit of above 12 acres of corn,	$397 04

Five acres of the above were entered for a premium, of which five acres the expense and proceeds of crop are in the same proportion to the whole twelve acres.

SIMEON DAVIDSON.

Tecumseh, Dec. 15th, 1858.

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REPORT OF T. T. LYON,

DELEGATE TO THE

AMERICAN POMOLOGICAL SOCIETY,

NEW YORK, SEPT. 14, 1858.

HON. C. DICKEY, *President of Michigan State Agricultural Society:*

DEAR SIR—The undersigned, who was appointed a delegate to attend the meeting of the American Pomological Society held at New York on the 14th, 15th and 16th days of September, 1858, would respectfully submit the following report:

This Association holds its sessions biennially, and usually brings together a large number of the first pomologists of the country. In order that the importance of their deliberations may be properly appreciated, it may be well to glance hastily at the state of pomological knowledge in our country prior to the commencement of their labors.

For more than two hundred years, the hardy pioneers of our country had been treading upon the heel of the retiring red man, and causing the wilderness to "bud and blossom," not merely with roses, but also with gardens and orchards, until our broad land had come to be acknowledged as the special realm of Pomona. But, in those early times, the extensive nurseries of the present day were yet unthought of, and the orchards were mainly composed of seedlings, while grafting was looked upon as a mysterious art, and the secret was guarded, by the initiated, with scrupulous care. From the constant production of seedlings arose many valuable varieties, many of which, doubt-

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less, failed to gain more than a local notoriety, while others have attained a world-wide reputation. Many others, also, were imported from foreign countries, both with and without name.

While these processes were going on, every man was "a law unto himself" in the matter of nomenclature, as in the infancy of fruit culture the importance of correct names was not as fully realized as in more recent times, and very few Societies had been organized to take cognizance of such matters.

Under such circumstances, as would naturally be supposed, our pomological nomenclature had grown to be an almost inextricable mass of confusion. Old and well known fruits were constantly appearing under new names, and new fruits were brought out with no reliable means of establishing their relative value, or of determining their right to assume a name.

A few local Societies had gradually sprung up at prominent points, which served to develop a broader interest in horticulture, and, at a later period, this increase of interest manifested itself in the establishment of horticultural periodicals, through which the experience of cultivators found publicity. For the purposes of horticulture proper, these instrumentalities were comparatively efficient; but in pomology, where the nomenclature is far more complex, and consequently more liable to error, where the most minute descriptions are frequently insufficient for purposes of identification, without an actual comparison of specimens, and where, even with these facilities, the best judges are sometimes at fault on account of the ever varying influence of climate, soil and season; the necessity of an association for the purpose of bringing together, periodically, the fruit growers of the country, with their fruits, had been gradually becoming more apparent, as the only efficient mode of securing true progress.

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Under the pressure of these acknowledged difficulties, a convention was assembled at Buffalo on the first of September, 1848, and was organized under the name of "The North American Pomological Convention." In the meantime the Massachusetts Horticultural Society, and that of Pennsylvania, together with the Board of Agriculture of the American Institute, had taken measures to call a central convention of fruit growers and pomologists, in the City of New York, which accordingly assembled, and was organized under the name of the American Congress of Fruit Growers, on the 11th of October, of the same year.

These two associations were again assembled in 1849, when measures were taken to merge them in one. This arrangement was perfected, and the new Society took the name of "The American Pomological Congress," and resolved to hold its next session at Cincinnati, in 1850, and to meet biennially thereafter.

During the earlier meetings of this Society, it was chiefly attended by fruit growers from New England, New York, New Jersey and Eastern Pennsylvania, with an occasional delegate from the Western States; and, as fruit growing at the West was yet, comparatively, in its infancy, the question of the success of a large proportion of the fruits in cultivation there, was yet undecided. It is, therefore, not surprising that many fruits were placed upon the Society's lists as successful, and worthy of general cultivation, which a riper experience has shown to be so only in a comparatively limited sense. As the opening up of new territory has extended the growth of fruits over a wider range of country, the fact has been gradually becoming more and more apparent, that very few, if any of our standard fruits, are universally successful; but that every distinct region must depend, more or less, upon varieties originating therein, or actually tested there, and found successful.

From these remarks it will be perceived that the Socie-

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ty's list must be taken with much allowance; in fact that they can only be employed with safety when consulted in connection with local experience or the lists of local Associations.

One of the most serious difficulties with which this Society has to contend, is the neglect of the great fruit growing interest to represent itself in their deliberations, while nurserymen, with a more just appreciation of their true interests, constitute a large proportion of the delegations. This, apparently, arises less from design on the part of any one class, than from the supineness of those whose deepest interests underlie this movement. The nurseryman, merely as such, has comparatively little to gain or lose by this association, beyond the impetus that may be communicated to tree planting, while the broader interests of the fruit grower demand an accurate knowledge of varieties in their adaptation to the desired purposes, and of the effects of the various methods of propagation upon the health and longevity of the trees. This information nurserymen, merely as such, are but illy prepared to communicate, from the fact that their interest in trees is supposed to cease with their removal from the nursery, and before the germs of diseases, imparted in the process of propagation became developed. It is equally true that the mere nurserymen can have no interest in studying the science of pomology, beyond the acquisition of knowledge sufficient to enable him, profitably, to meet and supply the demands of the public for his wares.

The true character, and, therefore, the real profitableness of varieties, can only be fully determined when the trees have arrived at full maturity; and it is, therefore, to the *fruit grower*, that we must look for full and reliable information upon this subject. From this view of the matter it is desirable that delegations to this Society should be largely made up of intelligent and experienced pomologists.

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The year 1858 was an unfortunate one for such an exhibition, as fruit, generally, was a failure. Notwithstanding this, the exhibition was said to be one of the finest ever made by the Society. Pears constituted the most prominent feature of the exhibition, some of the exhibitors showing as many as two hundred varieties. The display of apples was comparatively small. By far the finest lot of this fruit was shown by Westbrook & Mendenhale, of Greenboro, North Carolina, comprising seventy-seven distinct kinds, many of which were new Southern varieties. These had derived, probably from a more fervid and genial clime, a beauty of coloring and a maturity of flavor, difficult to rival in our more Northern climate. Another lot of seventy-one varieties was shown by E. H. Warren, of Chelmsford, Massachusetts.

Of plums, nearly all on exhibition were shown by Elwanger & Barry, of Rochester, New York, embracing thirty-seven varieties.

Peaches were almost entirely wanting. The largest lot was shown by Yardley Taylor, of Virginia, embracing but five varieties.

Several most delicious, green fleshed melons were shown by Joshua Pierce, of Washington, D. C., measuring from eighteen to twenty inches in length.

But one of the most noticeable features of the exhibition was the large number of new, native grapes displayed; furnishing a very encouraging indication of interest in this direction, and, also, of substantial progress. Among these the Delaware stands pre-eminent in beauty and flavor, with a hardiness and precocity of ripening which gives hope of success to almost the extreme Northern limit of our country. A few specimens of Logan were also on exhibition from Ohio. This is a still newer candidate for the public favor, and the specimens showed a quality and earliness, such as should assign it a place among the most valuable.

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For a capacity of succeeding under unfavorable circumstances, with great bearing qualities, combined with tolerable flavor, the Hartford Prolific stands pre-eminent,—a variety appropriately named, and which seems destined, at the North, to become, emphatically, the "poor man's grape."

The Rebecca was universally conceded to be the best white, native grape, if such it really is, but some members seemed to entertain a suspicion that it was the offspring of foreign parentage, and therefore would be likely to fail in our climate. This was not generally believed, and many persons testified to its entire hardiness. It was, however, admitted that it needed more time to develop its character.

Several recent Philadelphia seedlings were shown, among which were Clara, Brinckle, Graham and Roabe. These, or at least three of them, are objects of special interest, from the fact that they are confessedly American seedlings, from foreign varieties, which have, so far, proved hardy, and which claim to be of the very highest quality. They are objects of additional interest from the promise they seem to hold out, that by a continuation of the process of reproduction from the seed, the foreign grape may be ultimately acclimated here—a result ardently to be desired, as many of the foreigners possess a flavor and texture which our natives can hardly hope to rival.

The sessions of the Society were held at Mozart Hall, where the meeting was organized by the President, Marshall P. Wilder, of Massachusetts, at 11 o'clock A. M., when over one hundred delegates were found to be present.

After enrolling the names of delegates, the President, in accordance with the constitution, proceeded to deliver his address, in which, after commenting very gracefully and felicitously upon the mission the Society has assumed, he

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proceeded to discuss the question, "Can pears be grown for market at a profit?"

In alluding to the newspaper discussions of this subject during the previous year, he remarked that the question of success may be raised in regard to any other branch of terra culture. Where one succeeds another fails. Why? Not because Providence does not fulfill the divine promise "that seed time and harvest shall not fail," but because, in instances of failure, the conditions of success are not complied with.

After some allusions to the failures resulting from the recent severe winters, and the improbability of the frequent recurrence of such a catastrophe, he remarks upon the non-adaptation of the tree to the locality as follows:

"Some varieties are constitutionally delicate and feeble, and, of course, more subject than others to climatic influences. They may be of exquisite flavor, but are not well adapted to general cultivation. These would only be grown by amateurs in favorable positions. Others are robust, vigorous, hardy as the oak, resisting the extremes of cold and heat, of tempest and storm, retaining their luxuriant and persistent foliage to the end of the season. Such are the Fulton and McLaughlin, of Maine; the Buffum, the Abbott and Knight's Seedling, of Rhode Island; the Andrews, Harvard and Mirriam, of Massachusetts; the Dallas and Howell, of Connecticut; the Lawrence, Onondaga and Sheldon, of New York; the Brandywine and Kingsessing, of Pennsylvania; the Urbaniste, Beurre d'Anjou, Doyenne Boussock, Vicar of Winkfield, St. Michael Archange, Nouvean Poiteau, and last but not least, the Bartlett, of European origin. The latter, which was introduced into Dorchester, Massachusetts, before the beginning of the present century, and which has borne regular crops of delicious fruit for more than fifty years, is still vigorous, hardy and prolific.

"True these are not all of exquisite flavor, but all o

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them have valuable qualities. With a proper knowledge of the art of ripening, they are very useful sorts, and generally acceptable to the public; and if amateurs, who are sometimes in danger of being too fastidious, could obtain no other, they would pronounce them most excellent kinds. Not that we would detract from the cultivated taste which finds its gratification in the delicious Seckel, but as a national organization we are bound to consider the wants of the million—the facility and practicability of supplying them. Give us pears! pears for ourselves, for our families, for the millions who are about us, and who are to come after us!"

After discussing at some length respecting the practice of importing European trees, he discusses the vexed question of the permanency of quince grafted pear trees, in the following language:

"Much has been said against the longevity of the pear tree, particularly when grafted on the quince. In reference to the latter point, I need only reaffirm the sentiments contained in my last address, and subsequently corroborated by the most distinguished cultivators. One of these remarks: 'My best trees are on the quince. The best fruits of our exhibitions are from the quince stock, and our profits in fruit raising are from the same source. Let others have their own way in stating experiments based upon improper and bad management, drawing from these unsatisfactory conclusions. By a judicious selection of varieties and proper cultivation we shall fill our shelves, and walk among our well-shaped pyramids with a blessing for the unknown genius who first tried the quince as a stock for the pear, and made, really, in pear cultivation, the same revolution as steam in traveling.' Another gentleman, the editor of the oldest horticultural journal, sustains these declarations, adding: 'The attempts to write down the pear upon the quince stock are examples among a thousand others, in the literature of gardening, to assail

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some of the soundest principles of physiological science and practical art.' The additional experience during the last biennial term confirms my previous convictions of the truthfulness of these statements; and such is believed to be the sentiment of the best pomologists throughout the country."

After devoting some time to the enumeration of instances of success in the cultivation of this fruit for market, he closes this subject with the following remarks:

"So deep has the conviction of this truth become, and so uniform the success, that instead of planting trees as in former times, by the single tree or by the dozen, cultivators now plant orchards of hundreds and thousands, in firm and reasonable expectation of large increase."

"Such facts are conclusive, and ought to rectify the false theories which have been advanced on this subject. But it may be objected that these are instances of success developed by accidental adaptation of kinds, of soil, or climate; that such results are neither uniform nor common; in a word, that there are counter facts sufficient to justify an opposite conclusion, and therefore to sustain the opinion that pears cannot be made a reliable and profitable crop. * * * * What if pomology, as a science, is comparatively of recent date? What if our knowledge of vegetable physiology generally is very limited? What if the various sorts of fruits trees do require different systems of pruning and cultivation?—facts now generally conceded by experienced men. The laws which govern such treatment, and which, with the ordinary exceptions, ensure a crop, are as certain as any other scientific principles. Our mission is to investigate these laws, to settle the characteristic of each variety; to ascertain what soil is best adapted for supplying its appropriate food; to learn how and when it should be pruned, and to discover the best method of cultivation."

After some time devoted to the grape, with felicitations

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upon the results to be anticipated from the wide-spread interest displayed in the improvement, and discoursing warmly upon the many humanizing and elevating influences which characterize the pursuit of practical pomology, he closed his address with the following glowing language:

"But what imagination can conceive, what pencil sketch the changing hues, the varied magnificence and glory, when Pomona pours from her overflowing lap, the ripened treasures of the year! These, all these, are original designs, such as the genius of Corregio, a Claude Lorraine, and the oldest masters could only imitate.

"Here are creations, originally pronounced *very good.* Here are inexhaustible sources of pleasure, beauties which fade only to appear again. Here 'life flows pure, the heart more calmly beats.' Here, like the foliage and fruit falling from trees of favorite care, the true pomologist, after a well spent day, lies down to rest in the hope of a fairer to-morrow—in the glorious hope of partaking of the fruit of that tree which 'yieldeth its fruit every month, and whose leaves are for the healing of the nations.'"

After the conclusion of the address, a committee was appointed to nominate officers for the ensuing two years. The committee reported the following list of candidates, who were unanimously elected:

Hon. Marshall P. Wilder, of Mass., President;
One Vice President for each State and Territory;
Thomas P. James, of Phil., Penn., Treasurer;
Thomas W. Field, New York, Secretary.

Executive Committee.

President and Vice Presidents, *ex officio*;
W. D. Brinckle, Philadelphia, Penn.;
Rich. Peters, Atalanta, Georgia;
B. V. French, Boston, Mass;
W. L. Steele, Rockingham, N. C.;
Thos. Hogg, New York.

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Samuel Walker, Chairman of the General Fruit Committee, offered the report of the Committee, with a resolution that the reports from the several States be accepted, without reading, and published in the proceedings of the Society.

Mr. Walker also offered a resolution recommending the publication, under the auspices of the Society, of a catalogue of fruits which have been cultivated in this country, and also a local catalogue for each State.

The necessity of something of this kind was urged from the great number of varieties in cultivation, and the varied and often contradictory experience of growers of the same fruit in different sections of our country—a difficulty which is constantly assuming a greater magnitude, with the expansion of our population over a greater area. While the Society seemed conscious of the need of something of this sort, in view of the magnitude of the undertaking and the difficulties which surround it, it was not thought best to undertake it at present, and the subject was therefore laid upon the table.

In accordance with the recommendation of the business committee, the first evening was devoted to a discussion upon the culture of the pear, with the different modes of training and mulching. The discussion, however, was mainly confined to the subject of mulching; and it was generally conceded that the wholesale mulching generally recommended in the books had proved a failure—the mulch was in the way of cultivation. Some speakers thought it beneficial to newly planted trees; others thought a light coating desirable, after the season was somewhat advanced and the soil warm.

On the second day, the morning and afternoon sessions were devoted exclusively to the revision of the lists of pears. At the opening of the evening session, the following resolution was presented by T. T. Lyon, of Michigan, viz:

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Resolved, That the General Fruit Committee be instructed to revise the list of Fruits recommended for general cultivation, and to arrange them in two subdivisions—the one embracing such as are adapted only to amateur purposes, the other those that prove profitable as market fruits, and report such subdivision at the next biennial session of the Society.

Heretofore such fruits as American Summer Pearmain, Hawley, Melon, Summer Rose, and others, only desirable as amateur fruits, to be grown for their superior quality, with no regard for profit, have appeared in a common list with the more profitable varieties, with no distinguishing mark to indicate their character. Under these circumstances, inexperienced planters have often been misled by these lists, and have been induced to plant largely of varieties unadapted to the purpose intended. To provide against this difficulty, therefore, is the object of the resolution.

The list of native grapes that promise well was then taken up.

Delaware Grape was proposed for general cultivation. Mr. Bateham, of Ohio, remarked that it was found growing near Delaware, in that State, where it showed superior qualities, being rich in flavor, very early, free from mildew, and very hardy. It has been traced to New Jersey.

From its habit of growth, as well as from the circumstances of its discovery, many suspected it to be of foreign origin. It was, moreover, conceded to be difficult of propogation. It was, however, the united opinion of the best growers, and of those most thoroughly acquainted with it, that it is undoubtedly a native. It was, on all hands, conceded to be the "*ne plus ultra*" of native grapes. Recommended for general cultivation.

Concord was then taken up. Although not considered of first quality, its hardiness, earliness and vigorous habit, fit it for unfavorable localities, where many others fail. It

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was thought to succeed better at the South than in Boston. Recommended for general cultivation.

Rebecca next came under consideration. Mr. Prince thought it evidently a seedling of the Chasselas, (a foreign variety,) and, therefore, necessarily unworthy of recommendation in our climate. Mr. Hovey could discover nothing of the Chasselas character about it. Found it as hardy as the Delaware. It has the downy foliage, the cut lobes, and all the characteristics of a native grape. The vines were not touched when Isabella vines one and a half inches in diameter were killed. In answer to the question, "What is the condition of the original vine at Hudson?" Mr. Hovey farther remarked—"It is the finest vine I ever saw. The grapes are almost semi-transparent, with a delicious aroma that I have failed to find except in the Muscat grapes." With other growers, generally, it had succeeded well, but a few complained of mildew. The variety was passed over to await farther trial.

Norton's Virginia Seedling was proposed for general cultivation. It was generally thought to be utterly worthless, but a few considered it valuable as a wine grape. Passed over.

Union Village was proposed for the list that promise well. Dr. Warder thought it would not succeed much north of the north line of Pennsylvania. Mr. Prince thought it a better grape than the Concord. Mr. Cabot, of Massachusetts, had known it four years. It had stood with him unprotected the last two winters without injury. Mr. Walker remarked that it had been mistaken in Cincinnati for the Black Hamburg. Recommended as promising well.

Herbemont was proposed by D. Warder, to be placed on the same list, for the table or for wine. Mr. Hovey thought it was not generally known. Mr. Steele, of North Carolina, remarked that it was well known in that State, and by those who know what they are talking about, it is

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regarded as far superior to the Catawba as a wine grape. Recommended as promising well.

Logan was proposed by Mr. Thompson, of Ohio, as equal to the Isabella, and very much earlier. It was fully ripe two weeks ago (Sept. 1st.) Recommended as promising well.

Hartford Prolific was proposed by Mr. Terry, of Connecticut, for regions where the Isabella does not ripen well. He remarked that it ripened perfectly in Maine. Mr. Saul, of New York, remarked, you will drop half the berries of the bunch before the others are ripe. Mr. Hovey—It was condemned in toto at Rochester two years ago. I move that it be added to the list that promise well. Mr. Terry—When the grape was first cultivated it did fall from the vine, but it has been mending from that. Mr. Hoag, of Lockport, N. Y.—I have had the Hartford Prolific. It was ripe with me the first of September. I think it a most valuable grape. The President—I formed a very low opinion of it, but I have changed it. On my own place I have not had a ripe bunch of Isabella grapes for twenty years. Under these circumstances an earlier grape is a great acquisition for my family, and I have become very much pleased with the Hartford Prolific. It is perfectly hardy, never mildews, and I have had much larger bunches, and larger berries, than I have seen on the Isabella. I think it a very desirable grape for cold climates, on account of the surety of ripening and not mildewing. It was passed over informally.

Emily, Clara, Brinckle, Graham and Roabe, were mentioned, but as nothing new was elicited respecting them, they were passed over informally.

The Anna Grape was mentioned. Mr. Saul said it was produced by Eli Hasbrouck, of Newburgh. Dr. Grant paid him fifty dollars for it and thought he was getting a great thing, but it has not turned out what he expected it would be. It is a white grape, about the color of the

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Chasselas. He thinks now they are getting better every year.

Several other new grapes were mentioned and passed over, when the Society passed to the consideration of grapes for cultivation under glass.

The President—" Our Grapes for cultivation under glass are: Black Hamburg, Black Frontignan, Black Prince, White Muscat of Alexandria, Chasselas de Fontainbleau, Grizzly Frontignan, White Frontignan. Is it desirable to add to these?"

To these were added the following varieties: Cannon Hall Muscat, Zinfindal, West's St. Peters, Red Chasselas, Black Damascus, White Nice.

On the third day, at the opening of the morning session, the report of the Committee on Rejected Fruits was received and accepted. The list was then read and adopted by items, with the single exception of Beauty of Kent, which was retained by four or more votes, in accordance with the practice of the Society.

The list of Strawberries was then taken up for revision. Early Scarlet being under consideration, Mr. Prince proposed to strike it from the list. Others, however, valued it as a fertilizer, and it was retained.

Hooker's Seedling was considered by Mr. Barry and Mr. Thompson, as one of the very best. Mr. Field thought it would hardly do for market, but the fruit is large, well formed, and of high flavor. Recommended for general cultivation.

Wilson's Albany was proposed. Mr. Field said wherever it is produced it takes a high rank. It yields enormously. Mr. Prince—It has a large number of blooms, but half the flowers never bear fruit. Mr. Stowell had 150 berries on one plant. Mr. Manice had two quarts from a single plant, and three bushels from one hundred and fifty plants. Mr. Clift had two bushels to the square rod and of very good quality. Mr. Pardee had raised berries that meas-

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ured four, and four and three-fourth inches in circumference, of fine flavor, and of a mahogany color. He experimented two years, and had excellent results. Recommended for general cultivation.

Walker's Seedling. Various opinions; no action.

Burr's New Pine. Mr. Bateham had found a remarkable difference in different soils, with regard to this fruit, both as regards quality and quantity. It is necessary that a person should know how to grow it. Dr. Howe—It is an excellent flavored berry. Mr. Field would include it in a collection of ten varieties. Mr. Clark—It has entirely failed with us. Mr. S. O. Knapp—It bears well in Michigan. Dr. Ward—It will never be a profitable strawberry. I recommend it to the attention of amateurs.

Recommended for general cultivation.

Triomphe de Gand, was placed on the list that promise well.

Boydin's Late Mammoth was recommended by Mr. Quinn to be placed on the list that promise well. Mr. Prince—A large fruit, but a poor bearer. Dr. Ward—It has a late berry, of poor color and poor flavor.

Boston Pine was proposed by Mr. Bateham and Mr. Prince, to be stricken from the list. Dr. Ward—We want this variety as a fertilizer for Hovey's Seedling. Mr. Manice—We could not do without it. Mr. Cabot—It is of standard excellence. Mr. Waker—I must object to that. Mr. Sanders—It is one of the best, not the very best, flavor. Dr. Warder—It is not a good setter. Dr. Redmond—I never succeeded well with it.

Placed on the list for general cultivation.

Peabody's Hautbois was taken up, and drew out a wide range of experience. It appeared, as a general rule, to do well in Southern localities, but to fail at the North. It was passed over.

Longworth's Prolific was conceded to be generally successful, and recommended for general cultivation.

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Trollope's Victoria.—Mr. Scott thought it should be added to the list for general cultivation. Mr. Downing—Let it remain where it is. Mr. Hovey was not in favor of adding English varieties. Mr. Prince—It is a hermaphrodite. Mr. Hovey—I am of the opinion that it is impossible to cultivate an English strawberry with the hope of success. Leave all foreign varieties for amatuers. Mr. Manice—I have for eighteen years cultivated one hundred English varieties, and for the last few years have not retained one of them.

Stricken from the list.

McAvoy Extra Red.—Proposed for the list that promise well.

Rejected for its acidity.

Le Baron, Scott's Seedling, and McAvoy's Superior, were severally taken up and discussed, but finally passed over without action.

The list of raspberries was then taken up for revision.

The Allen was discussed, but finally passed without action, under the apprehension that it is an old English variety.

American Red was considered worthless in quality, and stricken from the list.

Thunderer was recommended by Dr. Grant as a large and productive variety of the highest flavor.

No action.

Bagley's Everbearing was presented by Mr. Bridgeman, who had specimens on exhibition. Some members doubted whether perpetual raspberries would ever be successful. Others hoped to see them as plenty as perpetual roses.

No action.

Doolittle's Black Cap was generally conceded to be a valuable variety.

Passed by without action.

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Currants.

Cherry Currant, was said to be largest and most acid variety grown. Mr. Hovey—It is certainly acid, but the vigor of the bush, and its great produce, render it worthy of cultivation; and why not grow plenty of sugar for them, as long as the sorghum does well! Mr. Saul—The Cherry Currant is large, probably the largest. The Versaillaise is a much larger bunch. The Cherry has a very short bunch. The Versaillaise will, I think, supersede the Cherry. Both were recommended as promising well.

Transparent Blanche was proposed as a very superior Currant. Decided to be identical with White Grape.

Red Grape was stated, on the authority of the London Horticultural Society, to be identical with Red Dutch.

Fertile de Pallua, one of the sweetest. Recommended as promising well.

La Caucasse.—Said to have bunches seven inches in length, and a berry over two inches in circumference, and sweeter than the Versaillaise.

The list of apples was now opened for revision.

Autumn Bough, Broadwell, Fornwalder, Coggswell, Carolina June, Jonathan, Mammouth Pippin, Smith's Cider, Wagener were severally added to the list for general cultivation.

Additions to the list that promise well were then announced to be in order, when Willis' Sweet, Buckingham and White Winter Pearmain were added to said list.

Mr. Bateham, of Ohio, then proposed the following resolution which was adopted:

Resolved, That the following apples on the list for general cultivation be noted as unsuited to Southern Ohio: Baldwin, Gravenstein, Hubbardston, Nonsuch, Lady Apple, Ladies' Sweeting, Rhode Island Greening, Roxbury Russet, Swaar, and Wine Apple.

Prior to this meeting, the following questions were sent out by the President of the Society:

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"What *six, twelve* and *twenty* varieties of the *apple* are best adapted to a family orchard of *one hundred* trees, and how many of each sort should it contain? What varieties, and how many of each, are best for an orchard of *one thousand* trees, designed to bear fruit for the market?

"What *six* and *twelve* varieties of the *Pear* are best for family use on the Pear stock? What varieties on the Quince stock? What varieties, and how many of each of these, are best adapted to a Pear orchard of *one hundred* or *one thousand* trees?

"What are the *six* and *twelve* best varieties of the PEACH for a family orchard? What are the best varieties, and how many of each, are best adapted to a Peach orchard of *one hundred* or *one thousand* trees?

"Answers to these questions should be made from reliable experience, and with reference to the proximity or remoteness of the market."

In reply to these interrogatories, lists, more or less full, were received from various localities as follows:

From Connecticut, seven distinct lists.
" Massachusetts, one distinct list.
" New York, one distinct list.
" New Jersey, two distinct lists.
" Pennsylvania, one distinct list.
" Virginia, one distinct list.
" Ohio, one distinct list.
" Michigan, one distinct list.
" Illinois, one distinct list.
" Georgia, two distinct lists.

Making eighteen distinct lists, from ten different States.

These lists show a great diversity of experience in the various sections of our country. An analysis and comparison of them would elicit much valuable information, but their voluminous character effectually forbids the attempt. We will therefore content ourselves with copying the report for this State:

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"*Report from Michigan.*

"ADRIAN, Mich., Aug. 26th, 1858.

"P. BARRY, ESQ.—*Dear Sir:* I notice in the transactions of the American Pomological Society for 1856 my name as chairman of the Society's Fruit Committee for Michigan. I have had no other notice of this appointment, nor have I received any circular or other document specifying the subject on which the several committees would be expected to report, except the publication in the Horticulturist, Cultivator, and other journals, of certain questions, with a request that answers be sent by the first proximo, either to Mr. Walker or yourself. I have seen nothing to indicate that *I* was to appoint *other* members of the committee. I now send you *my* answer to the questions propounded. I regret that they could not be answered by some person possessing more accurate knowledge of these subjects than myself, and that I have had so little time at my command in making these answers.

Respectfully yours,

D. K. UNDERWOOD."

Best six varieties of apples for an orchard of one hundred trees for family use:

Early Harvest, 10; Late Strawberry, 10; Gravenstein, 15; Belmont, 15; Yellow Belflower, 30; Esopus Spitzenburg, 20.

Best twelve varieties of apples for an orchard of one hundred trees:

Early Harvest, 6; American Summer Pearmain, 6; Late Strawberry, 6; Gravenstein, 8; Fall Pippin, 6; Rambo, 6; Belmont, 10; Ladies' Sweeting, 6; Yellow Belflower, 20; Swaar, 6; Esopus Spitzenburg, 12; Northern Spy, 8

Best twenty varieties of apples for an orchard of one hundred trees:

Early Harvest, 6; American Summer Pearmain, 3; Red Astrachan, 3; Bough, 3; Summer Queen, 3; Late Straw-

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berry, 4; Gravenstein, 5; Fall Pippin, 5; Fameuse, 4; Rambo, 4; Ladies' Sweeting, 6; Belmont, 6; Rhode Island Greening, 4; Yellow Belflower, 12; Esopus Spitzenburg, 6; Swaar, 6; Jonathan, 4; Hubbardston Nonsuch, 4; Roxbury Russet, 6; Northern Spy, 6.

Best varieties of Apples for an orchard of one thousand trees, for the market:

Early Harvest, 50; Red Astrachan, 50; Early Strawberry, 25; *American Summer Pearmain, 25; Early Joe, 25; Late Strawberry, 25; Gravenstein, 50; Fameuse, 50; Porter, 25; Rambo, 50; Talman Sweet, 25; Ladies' Sweeting, 25; Belmont, 75; †Vandevere, 50; Baldwin, 25; Red Canada, 75; Rhode Island Greening, 75; Jonathan, 50; Yellow Belflower, 75; Hubbardston Nonsuch, 25; Westfield Seeknofurther, 25; Roxbury Russet, 50; Northern Spy, 50.

Best six varieties of Pears for a Pear orchard for family use:

Bartlett, Flemish Beauty, Belle Lucrative, White Doyenne, Seckel, Winter Nelis.

Best twelve varieties of Pears for family use:

Bloodgood, Tyson, Dearborn's Seedling, Bartlett, Flemish Beauty, Beurre d'Anjon, Belle Lucrative, White Doyenne, Sheldon, Seckel, Lawrence, Winter Nelis.

Best six on Quince stocks:

Tyson, Louise Bonne de Jersey, Belle Lucrative, Duchesse d'Angouleme, Beurre Diel, Beurre Easter.

Best twelve on Quince stocks:

Tyson, Rostiezer, Belle Lucrative, Louise Bonne de Jersey, Duchesse d'Angouleme, Stevens' Genesee, White Doyenne, Urbaniste, Beurre Diel, Glout Morceau, Vicar of Winkfield, Beurre Easter.

Best varieties of Pears on Pear stock for an orchard of one hundred trees:

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*On light, warm soils substitute the Summer Queen.

† On light, calcareous soils substitute Newtown Pippin.

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Madelaine, 3; Bloodgood, 3; Dearborn's Seedling, 3; Tyson, 3; Rostiezer, 3; Bartlett, 10; Flemish Beauty, 10; Beurre d'Anjou, 5; White Doyenne, 15; Belle Lucrative, 5; Oswego Beurre, 5; Sheldon, 5; Buffum, 5; Seckel, 10; Lawrence, 5; Winter Nelis, 5; Beurre d'Aremburg, 5.

Best on Quince stock for an orchard of one hundred trees:

Tyson, 5; Rostiezer, 5; Belle Lucrative, 10; Stevens' Genesee, 5; Louise Bonne de Jersey, 25; Duchesse d'Angouleme, 20; Glout Morceau, 5; Beurre Diel, 10; Vicar of Winkfield, 5; Beurre Easter, 10.

Best six varieties of Peaches for a family orchard:

Early York Serrate, Coolidge's Favorite, Crawford's Early, Grosse Mignonne, Oldmixon, free, Crawford's Late.

Best twelve varieties of Peaches for a family orchard:

Early York Serrate, Early York, large, Coolidge's Favorite, Crawford's Early, Jacques' Rareripe, Grosse Mignonne, George IV., Large Red Rareripe, White Imperial, Oldmixon, free, Bergen's Yellow, Crawford's Late.

Best varieties of Peaches for an orchard of one hundred trees:

Crawford's Early, 20; Early York, 10; Coolidge's Favorite, 10; Jacques' Rareripe, 5; Grosse Mignonne, 10; Oldmixon, free, 10; Large Red Rareripe, 10; White Imperial, 5; Crawford's Late, 20.

In the same proportion for an orchard of one thousand trees.

D. K. UNDERWOOD.

Several interesting papers were read before the Society during its sessions, and ordered to be published in its proceedings. Among these was one by L. E. Berchmans, of New Jersey, on "Fruit growing in a general point of view," in which the humanizing and elevating influences of fruit culture were set forth, together with its importance as compared with the culture of grain crops. The importance of the adaptation of the variety to the locality

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was also considered. Among his concluding remarks is the following: "We have a wide area, a better climate, generally speaking, for fruit crops than Europe. I can safely state that I have seen more fruits of the choice kinds in a single exhibition in Boston or Rochester than in twenty of the best exhibitions of Europe, where at least fifty fruit trees are cultivated upon a given space for *one* growing here." These statements are the more forcible as coming from a recent resident and native of western Europe.

Another was also read by T. W. Field, on the "Adaptation of varieties of pears to soils and localities," in which some of the causes of the want of success among planters were set forth, among which were mentioned the constitutional feebleness of many varieties, especially among those of European origin; also the exceeding fickleness of this fruit in its choice of soils and localities. Having shown some of the difficulties with which the planter has to contend, he proceeds to set forth the remedy:

"Having thus drawn your attention to the uncertainty of the adaptation of any particular variety of pear to a given soil, and the difficulty of establishing the fact, otherwise than by experiment, allow me to suggest my conception of the plan by which nature, aided by art, will one day overcome all these obstacles.

"Left entirely to nature, we should have in time only those entirely and perfectly fitted to their place. Year after year in the seed bed and the nursery would perish the more sickly and enfeebled in constitution, until neither blight, nor summer's heat, nor winter's frost, would scath the survivors.

"Somewhere shall the pollen of the strong but half subdued savage fall upon the pistils of a beautiful but too delicate variety, and the union shall produce a seed whose fruit will repay all the labor and watchfulness that had hitherto accomplished nothing."

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After enumerating a number of recent native seedlings, giving evidence of improvement in this direction, he concludes with the following remarks:

"That this progress of adaptation is going on all around us may be seen by the examples at Philadelphia and vicinity, of the Seckel, Pennsylvania, Reading and others. The Harvard, Boston, Dix, Adams, Cabot, and Dana's Seedlings of Boston and vicinity, with Oswego, New Haven and Geneva, for centers of other localities, which have brought forth evidence of improvement in the pear, destined to assist the work of adaptation.

"Let every seed then be sown, and without stint or discouragement, for there is a definite and worthy object to be accomplished, the adaptation of the variety to its place; and although the planter may not live to eat the fruit of his seed, yet a generation that shall, will rise up and call him blessed."

A communication on "Fruit Culture" was received from J. J. Thomas, and read before the meeting, in which he speaks of having traced the roots of one year planted dwarf pears, and found them to have extended over four feet; and from this fact he deduces the necessity of great breadth of culture, and draws arguments against the practice of digging circles about the stems of trees, unless these circles are of a size to cover the whole extent of the roots, besides the soil which the roots of the surrounding grass may penetrate. This, according to his computation, renders it necessary to cultivate a circle not less than ten feet in diameter about dwarf pears with heads, as in this case, of only two feet diameter. Another experiment led him to the conclusion that the roots of a peach tree ten feet high extended so as to appropriate a circle of thirty feet in diameter.

In conclusion, he remarks: "I furnish these merely as a small contribution toward the effort to induce the planters, generally, to give their fruit trees that attention which

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they so eminently deserve, and which is absolutely essential to their good growth, and the full development of the highest quality of the fruit. Until proper attention and thorough cultivation is given to the trees, we shall not cease to hear stories of disaster, failure and disappointment."

D. Redmond, associate editor of the Southern Cultivator, read a highly interesting paper on the "Pomological Resources of the South."

Speaking of the Apple, he says: "A great deal of error and misapprehension has heretofore existed in regard to the capacity of the South for the production of the Apple; and even now you will find thousands of intelligent persons, North and South, who fully believe that it is impossible to raise *winter* apples in the South, and that it is necessary to look to the North for a supply of *long-keeping* varieties."

He also states that within the last eight or ten years a large number of *native Southern* varieties have sprung up, mostly in the mountainous and middle portions of the Carolinas and Georgia, many of which are *superior* in size, flavor, and keeping qualities, to the very best apples of the North or of Europe.

He further states: "We may here remark that nearly or quite all the early summer varieties of the North do well with us, but that the northern fall and winter sorts, especially the latter, are of no value whatever in our climate, as the heat of our spring months forces them into premature ripening, and causes them to fall from the tree and decay." He enumerates one hundred and thirty varieties of such seedlings, claiming superior qualities, and states that "At a late meeting of the Georgia Pomological Society, held at Athens, there were exhibited five hundred and sixty-eight lots of fruit, including seventy-four varieties of apples, one hundred and forty-four of pears,

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ninety-nine of peaches, thirty-four of plums, eleven of grapes, and other fruits in proportion."

Speaking of Pears, he says: "The same feeling of dependence upon other sections, and distrust of our own resources, which has heretofore prevented the extensive cultivation of the apple, has retarded the planting of the pear, though wherever this delicious fruit has been tried it has attained a size and flavor nowhere else known." He also states that most of the leading northern varieties succeed well at the South, "the principal requisites being deep, mellow and careful culture, and the training of the top of the tree *very low* and spreading, for the purpose of shading the trunk of the tree, and the earth over the roots, from the scorching and blistering rays of the sun."

Speaking of Peaches, he says: "The South is the true home of the peach; and it attains with us, undoubtedly, its very highest degree of perfection.

"Thousands of the very finest seedling peaches, unnamed and comparatively unknown, are scattered through the South, along the roadsides, in the open fields, and in the remote corners of fences and hedges. The tree will sometimes bear fruit the second year from the seed, and always the third year; and when 'worked,' succeeds well either grafted or budded.

"The peach, however, even in our favored clime, has many enemies, and is liable to numerous disasters. Among the first is the borer, (ægeria exitiosa,) which is generally very destructive. The use of boiling water, poured freely into a basin-shaped cavity at the 'collar' of the tree, (to destroy grubs already formed,) and the planting of clumps of the common tansy, (T. vulgari,) immediately around the trunk, as a preventive, have been found very efficacious in many cases. But the most practicable and easy plan of destroying the borer, where the Peach is largely cultivated, will be found to be the removal, in the fall, of the earth for the space of a foot, and the depth of from three

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to six inches, exposing the stem and 'collar' of the tree to the action of the frosts of winter; this cavity to be refilled in the spring with fresh earth, heaping it up into a conical mound to the height of ten or twelve inches around the trunk, and allowing it to remain so until fall again."

"We cannot consider the peach crop as generally certain oftener than three years in five; and yet, with this serious drawback, it has been found very profitable by those who have railroad and other easy access to our prominent seaports, to plant very largely for the New York market, which has been supplied, to a considerable extent, during the past four or five years, with early peaches from Georgia and South Carolina. We have in the South for home consumption a constant succession of peaches, (mostly native seedlings,) from the middle of June to the first of November."

The Nectarine is said to bear as well and regularly as the peach.

"The Apricot grows vigorously, and is quite free from disease as a tree; but its extreme earliness of blooming, and the almost certain liability of the fruit being killed by spring frosts, render it rather undesirable for orchard culture."

The Plum is also said to grow vigorously, and not to be liable to the "black knot," and to be mostly free from the attacks of curculio.

The Cherry, the Currant, the Gooseberry, the Raspberry, and the improved variety of the Blackberry are conceded to be less successful than at the North.

"The Strawberry is one of the most profitable and easily cultivated fruits of the South—beginning to ripen early in April, and continuing, *if freely watered*, to give us a constant supply of fruit during four or five months."

The Jujube, the Olive, the Pomegranate, the Fig, the Quince, the Mulberry, and the Almond are spoken of as more or less successful.

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In conclusion, the Grape is spoken of as finding its *true home* in the South, and growing and producing fruit with a luxuriance and abundance that is seen in no other part of the Union. He states that they are just now getting into a "grape mania" at the South, and farther on he remarks: "Though only at the beginning, as it were, of this enterprise, we hazard little in predicting that the time is not very far distant, when the culture of grapes and wine making will be second in importance only to the growth of cotton, at the South—and that the day is near at hand when every man among us may, literally, 'sit under his own vine and fig tree,' and drink his own wine, to the utter exclusion of those maddening mixtures which are the prolific causes of so much social and moral misery."

FRUIT CATALOGUE OF THE AMERICAN POMOLOGICAL SOCIETY, FOR GENERAL CULTIVATION.

Apples.

American Summer Pearmain, Autumn Bough, Baldwin, Benoni, Bullock's Pippin, Carolina June, Danvers' Winter Sweet, Early Harvest, Early Strawberry, Fall Pippin, Fameuse, Gravenstein, Hawley, Hightop Sweeting, Hubbardston Nonsuch, Jonathan, Lady Apple, Ladies' Sweet, Large Yellow Bough, Nelson, Minister, Monmouth Pippin, Porter, Primate, Rambo, Red Astrachan, Rhode Island Greening, Roxbury Russet, Smith's Cider, Summer Rose, Swaar, Vandevere, Wagener, Williams' Favorite, (except for light soils,) Wine Apple, or Hays' Winesap.

Pears.

Ananas d'Ete, Andrews, Bartlett, Belle Lucrative, Beurre d'Anjou, Beurre d'Aremburg, Beurre Diel, Beurre Bosc, Beurre St. Nicholas, Beurre Clairgean, Beurre Gifford, Beurre Superfine, Brandywine, Bloodgood, Buffum, Cabot, Dearborn's Seedling, Doyenne d'Ete, Doyenne Boussock;

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Doyenne d'Almcon, Flemish Beauty, Fulton, Golden Beurre of Bilboa, Kingsessing, Howell, Lawrence, Louise Bonne de Jersey, Madelaine, Manning's Elizabeth, Onondaga, Osband's Summer, Paradise d'Antomne, Rostiezer, Seckel, Sheldon, St. Michael Archange, Tyson, Urbaniste, Vicar of Winkfield, Winter Nelis, Uvedalis St. Germain, (for baking.)

For cultivation on Quince stocks:

Pears.

Beurre Superfine, Beurre Hardy, Buffum, Belle Lucrative, Belle Epine Dumas, Beurre d'Amalis, Beurre d'Anjou, Beurre Diel, Beurre Langelier, Catillae, Duchesse d'Angouleme, Doyenne d'Almcon, Easter Beurre, Figue d'Almcon, Glout Morceau, Louise Bonne de Jersey, Napoleon, Nouvean Poiteau, Rostiezer, Soldat Laboreur, St. Michael Archange, Urbaniste, Uvedalis St. Germain, (for baking,) Vicar of Winkfield, White Doyenne.

Plums.

Blecker's Gage, Coe's Golden Drop, Green Gage, Jefferson, Lawrence's Favorite, Lombard, Monroe, Purple Favorite, Prince's Yellow Gage, Purple Gage, Reine Claude de Bavay, Smith's Orleans, Washington, McLaughlin.

Cherries.

Belle d'Orleans, Belle Magnifique, Black Eagle, Black Tartarian, Coe's Transparent, Downer's Late, Early Purple Guigne, Governor Wood, Elton, Early Richmond, (for cooking,) Graffion or Bejarreau, Knight's Early Black, Mayduke, Reine Hortense.

Apricots.

Breda, Large Early, Moorpark.

Nectarines.

Downton, Early Violet, Elruge.

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Peaches.

Bergen's Yellow, Crawford's Early, Coolidge's Favorite, Crawford's Late, Early York, serrated, George IV, Grosse Mignonne, Morris' White, Early York, large, Hill's Chili, Large White Cling, Madeleine de Courson, Teton de Venues, Oldmixon Free, Oldmixon Cling.

Grapes, under glass.

Black Damascus, Black Hamburg, Black Frontignan, Black Prince, Chasselas de Fontainbleau, Red Chasselas, Cannon Hall Muscat, Grizzly Frontignan, White Frontignan, White Muscat of Alexandria, White Nice, West's St. Peter, Zinfindal.

Grapes, open culture.

Catawba, Concord, Delaware, Diana, Isabella.

Raspberries.

Fastolf, Franconia, French, Kuevet's Giant, Orange, Red Antwerp, Yellow Antwerp.

Strawberries.

Boston Pine, Hovey's Seedling, Burr's New Pine, Longworth's Prolific, Large Early Scarlet, Hooker's Seedling, Wilson's Seedling.

Currants.

Black Naples, May's Victoria, Red Dutch, White Dutch, White Grape.

Gooseberries.

Crown Bob, Early Sulphur, Green Gage, Green Walnut, Houghton's Seedling, Iron Monger, Laurel, Red Champagne, Warrington, Woodward's Whitesmith.

Blackberries.

Lawton's New Rohelle, Dorchester Blackberry.

New varieties that promise well:

Apples.

Broadwell, Buckingham, Coggswell, Fornwalder, Gene-

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see Chief, Jeffries, King of Tompkins County, Mother, Smokehouse, White Winter Pearmain, Winter Sweet Paradise, Winthrop Greening or Lincoln Pippin.

Pears.

Adams, Alpha, Bergen, Beurre d'Albert, Beurre Gris d'Hiver Nouveau, Beurre Hardy, Beurre Kennes, Beurre Langelier, Beurre Nantais, Chancellor, Charles Van Hooghten, Collins, Comte de Flandre, Conseiller de la Cour, Comtesse d'Alost, Delius d'Heerdenpont de Belgigne, Dix, Rouselet de'Esperen, Sterling, Theodore Van Mons, Duchesse de Berri d'Ete, Emile de'Heyst, Fondante de Comice, Fondante de Chorneuse, Fondante de Malines, Fondante de Noel, Henkel, Hosen Schenk, Hull, Jalousie de Fonlenay Vendec, Kirtland, Lodge, (of Penn.,) Niles, Ott, Philadelphia, Pinnect, Pius IX, Pratt, Van Assene or Van Assche, Walker, Zepherine Grejorse.

Peaches.

Teton de Venus, Gorgas, Hills Chili, Madeline de Courson, Susquehanna.

Plums.

Bradshaw, Duane's Purple, Fellenbury, General Hand, German Prune, Ive's Washington Seedling, Munroe, Pond's Seedling, Rivers' Favorite, St. Martin's Quetsche, White Damson.

Cherries.

American Amber, Bijarreau Monstreuse de Mezel, Black Hawk, Great Bejarreau of Downing, Rockport Bijarreau, Hovey, Kirtland's Mary, Ohio Beauty, Walsh's Seedling.

Grapes.

Herbemont, Logan, Rebecca, Union Village.

Raspberries.

Cape, Catawissa, Thunderer, Walker.

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Strawberries.

Genesee, Le Baron, McAvoy's Superior, Scarlet Magnate, Trollope's Victoria, Walker's Seedling.

Currants.

Versaillaise, Cherry, Fertile de Pallua.

For particular localities:

Apples.

Red Canada, Esopus Spitzenburg, Newtown Pippin, Northern Spy, Yellow Belflower.

Pears.

Grey Doyenne, White Doyenne.

Peaches.

China Cling, Heath Cling, Carpenter's White.

Plums.

Imperial Gage.

Strawberries.

Burr's New Pine, Jenney's Seedling.

For Northern localities:

Apples.

Ribston Pippin.

For Gardens:

Apples.

Garden Royal.

Cherries, for special cultivation.

Nopoleon Bejarreau.

The Society has also prepared a list of rejected varieties, which, from its great length, is omitted.

All which is respectfully submitted.

T. T. LYON.

Plymouth, 6th June, 1859.

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[As a very useful appendix to the above report; the following articles, written by Mr. Lyon for the Michigan Farmer, are given in these Transactions. They contain most excellent critical remarks on a very large number of fruits grown in this State; and it is believed that no more careful or more acceptable series of papers could be put on record in these Transactions.—SECRETARY.]

THE BEST SIX VARIETIES OF APPLES FOR AN ORCHARD OF ONE HUNDRED TREES.

In reply to the query, "What are the best six varieties of Apples for an orchard of one hundred trees for family use," Dr. Underwood, of Adrian, in his report to the American Pomological Association, gives the following list:

Early Harvest,	10
Late Strawberry,	10
Gravenstein,	15
Belmont,	15
Yellow Belflower,	30
Esopus Spitzenburg,	20
Total,	100

It was doubtless the object of the querist to elicit information, not as to what are absolutely the best six varieties in each locality, but what are the best six furnishing a succession, as far as possible, during the year; a consideration of the first importance in a family orchard.

Respecting the first variety in the above list, there can be but one opinion, as it is confessedly the best of its season, and among the very first to ripen in this climate. It, however, cannot readily be kept beyond the latter part of August, and occasionally disappears before that time. This would leave nearly or quite a month, during the very height of the fruit season, unprovided for; as the Late Strawberry and Gravenstein, which are next on the list,

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do not commence to ripen till near the close of September, and as they cover nearly or quite the same season, the propriety of introducing both in so limited a list may well be doubted.

Gravenstein is generally conceded to be a fruit of the first quality, and the tree is one of the most beautiful and vigorous we have; but Late Strawberry, although a fine grower, is less desirable in this respect, while the fruit is less in size, less beautiful, and less desirable in quality. It would seem, therefore, to have been more appropriate to substitute for this one of the August and September fruits, of which there is a great variety, and among which are some of the highest value, and well adapted to fill the hiatus existing here. Among those adapted to this purpose, we would name the Golden Pippin of Michigan, (which will probably prove to be Lowell,) American Summer Pearmain, Benoni, Red Astrachan and Early Joe; all of which are well known as desirable varieties for this State, although the last can only be recommended as an amateur fruit.

The Belmont, which is the fourth variety on the list, seems to have been adopted upon its reputation elsewhere, as it is almost unknown in many portions of the State. It is rarely shown at our State Fairs, and seldom, if ever, appears in our markets. At a meeting of the Standing Fruit Committee of the State Horticultural Society, held at Detroit during the Agricultural Fair of 1857, this fruit was recommended as among the best twelve, giving a succession for general cultivation in this State. It was inserted chiefly upon the recommendation of the Chairman, (H. G. Wells, of Kalamazoo,) with whom it is an old acquaintance. In the grounds of the writer, it has borne several years. The first crop was quite a full one, and the fruits were very large and fair, and exceedingly beautiful, and the flavor was all that could be desired; but fully one-half the crop rotted upon the tree before matu-

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rity. The subsequent crops have been rather moderate ones, and for the most part, so cracked and scabby as to be almost worthless. Soil, a sandy loam—subsoil clay.

The writer knows of no other bearing trees in this region of country.

Another objection to the adoption of this fruit in this connection is, that it does not come to maturity soon enough to follow the Gravenstein, which in this region is usually past its season by the middle of October, while the Belmont will hardly be fully mature before the close of November.

It would, therefore, appear preferable to adopt for this place, the old, well known Fall Pippin, which will begin to mature its fruit about the first of October, and will last till February, and sometimes even till April. Throughout the greater portion of the State, it is believed to be a good bearer and a strong grower, while the quality of its fruit, for all purposes, is second to none of its season. In the prairie region it is said to be unproductive, and this may, therefore, be true of some portions of this State, but on the oak openings and timbered lands of this section, it is above reproach in this respect.

The next variety on the list is Yellow Belflower, a very excellent fruit for all purposes, but one which is said to fail in some sections of the State. It is also a very tender fruit, requiring the most careful handling, to prevent serious injury in the process of gathering and transportation. These objections, however, might and perhaps should be waived were it not that we have such a fruit as the Rhode Island Greening, which possesses all the valuable qualities of this, with the additional one of keeping sometime longer, while it bears handling and carriage remarkably well. Throughout the greater portion of the State it is believed to be entirely successful.

Esopus Spitzenburg, the last variety upon the list, is beyond question, one of the first of our American fruits, and

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has become a standard by which others are compared: yet there are reasons why it should not occupy a place on a list so restricted as this. It is inserted as the longest keeper of the list, and therefore, to meet the necessities of the case, it should be susceptible of preservation till June or July without especial care. In practice, however, it will be found difficult to keep it beyond April, leaving a hiatus of a month, before the summer fruits are in season, and one of two, or perhaps three months, before the maturity of the earliest apples. Either the Yellow Belflower or the Rhode Island Greening, which was proposed in its stead, may be kept till March, when such long keepers as Roxbury Russet and Red Canada will be in condition for use, and in a good cellar, may be kept with little difficulty till June or July. The former is an excellent variety for all purposes, if kept from the air to prevent shriveling, but less profitable than the latter, which is a very hardy, prolific, beautiful and agreeable variety for the dessert and market, but unfit for cooking. The Red Canada is mostly known in this region of the State, as Steel's Red Winter. In Ohio, it is called Richfield Nonsuch, and in the Eastern States it frequently takes the name, Old Nonsuch.

It will be obvious to all, that the orchard of one hundred trees, contemplated by these queries, will be when fully in bearing, far more than sufficient for the wants of a single family. It therefore becomes necessary to consider the adaptability of the varieties to the market, as well as to the wants of the family.

There is a large class of varieties, of the finest quality, which from the habit of the trees, its unproductiveness, or from the small size, unattractive appearance, or extreme tenderness of the fruit, would be unprofitable for the market, though admirably adapted to the wants of the family. In so small a list, these are necessarily excluded in favor of others, possessing these desirable qualities in a

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less degree, but combining instead, the essential market qualities of productiveness, size, beauty and firmness.

THE BEST TWELVE VARIETIES OF APPLES FOR AN ORCHARD OF ONE HUNDRED TREES.

The report recommends the following, as the best for a family orchard of one hundred trees, embracing twelve varieties:

Early Harvest,	6
American Summer Pearmain,	6
Late Strawberry,	6
Gravenstein,	8
Fall Pippin,	6
Rambo,	6
Belmont,	10
Ladies' Sweeting,	6
Yellow Belflower,	20
Swaar,	6
Esopus Spitzenburg,	12
Northern Spy,	8
Total,	100

With the list of six varieties only, it was necessary to select with reference to productiveness or profit, rather than quality, but with the present more extended list, some of the finer amateur varieties might be admitted, in quantities sufficient for home use, as well as a few kinds especially adapted to culinary purposes.

It will also be observed that most families who do not make fruit growing a special or principal business, will find themselves fully employed during the summer and fall, and will therefore prefer to have barely a home supply of the earlier varieties, with the surplus of winter sorts, when they have more leisure to attend to them. Bringing the above list to this test, we observe that the number of

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trees of Early Harvest, when fully in bearing, will more than doubly suffice for the use of a single family, leaving the produce of three or four trees to be wasted, unless marketed during the hurry of haying or harvesting.

It will also be found that the American Summer Pearmain, which is next on the list, does not mature in season to follow the Early Harvest, leaving a vacancy, which should be filled by some such variety as Red Astrachan, Early Joe, Early Strawberry, or Duchess of Oldenburg; to admit which, the Late Strawberry might be admitted, as it covers nearly the same season as Gravenstein, which is a preferable variety.

The list gives twenty-six trees, the fruit of which will have passed out of season by the first of October, or very soon thereafter, which, allowing the trees to produce but five bushels each, would yield a total of one hundred and thirty bushels for the consumption of a single family during a little more than two months; and that, also, during the season in which a large variety of other and more luscious fruits are in their prime.

It will also be observed, that prior to the Fall Pippin, there is no fruit on the list at all adapted to culinary purposes, if we except Early Harvest, the remaining three being properly dessert fruits. This omission might be supplied by inserting Keswick Codlin, or Hawthordon, the former, especially, being admirably adapted to this purpose, cooking admirably even when but half grown, and continuing till October.

Fall Pippin is said to be unproductive in some parts of the West, and the same objection was made to it by the fruit growers of Western New York, at their session last winter; but it is believed to be eminently profitable throughout the greater portion of this State, and in view of the fact that it comes into use about the last of September in our climate, and usually keeps well till February or

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March, its numbers might well be increased at the expense of those preceding it.

Rambo, which is next on the list, is only recommended from Ohio and Pennsylvania, which would seem to indicate some deficiency in the elements of popularity. With us it has a habit of bearing enormous crops in alternate years, from which cause the fruit becomes small, and the trees are often broken by the burden. This may be prevented by thinning the crop, but in practice, this is seldom attended to; and if we recollect that the preceding variety covers the same season, its introduction here may be considered as of doubtful propriety.

Belmont was fully discussed in the preceding article. If it is not more successful in other portions of the State than it seems to be here, the expediency of introducing it into the list is more than doubtful, unless its great beauty and exceedingly agreeable flavor should induce the planting of a tree or two, strictly for home uses.

Ladies' Sweeting appears to be, comparatively, little known in most portions of the State, but it will probably prove worthy of the place it occupies. The only question will be whether it is capable of assuming the place of the time-honored Talman Sweet, for winter baking.

Yellow Belflower, where it is successful, is one of the first of winter cooking apples, but as it is not popular in the market, it would perhaps be better to substitute for it Rhode Island Greening, reserving only enough for home use.

Swaar is another of the very finest fruits, and also a very superior keeper, but which, in the hands of ordinary cultivators, will hardly prove desirable beyond the wants of the family, as it is obstinately over productive, and consequently the fruit soon becomes small and scabby, unless under the most liberal and enlightened treatment. Notwithstanding these drawbacks, however, its qualities are so decidedly superior that an orchard can hardly be said to be complete without it.

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Esopus Spitzenburg is liable to but a single objection; which is that it is unprofitable, as compared with several other varieties. It has, however, so many superior qualities, that it can hardly be spared from the list, although a reduction of the number might be desirable.

Northern Spy is the last upon the list, and its right to be there at all is, in the estimation of the writer, more than questionable. The fruit growers of its native region (western New York) are by no means satisfied with it, and as it is a very tardy bearer, its reputation is yet but partially established in this State. Although it has occasionally borne fine crops here, these have so far been the exception rather than the rule, while the variety already displays a decided tendency to produce scabby and imperfect fruit. Indeed, it may be considered as already settled, that if successful here, it must be under the best of treatment, or with the most favorable local circumstances.

In reviewing this list, we observe the same difficulty that was observed against the preceding one, viz: that, with the exception of Ladies' Sweeting, it cannot be relied upon to produce a supply of fruit much beyond the month of March—a serious objection; as during no part of the year is the lack of fruit so difficult to supply, as during the spring and early summer. In order, therefore, to provide for this lack, it might be well to omit such varieties as can be most conveniently spared, and add some of the longest keepers, which can be relied on to furnish a supply till the summer fruits are again in season.

For this purpose Roxbury Russet will prove desirable as a culinary variety, and a tolerable dessert fruit, if kept in tight vessels to prevent shriveling; and Red Canada, (Steel's Red Winter, of Wayne county,) will be found one of the most popular and profitable market and dessert fruits for this State. It is a very slender grower, and should, on that account, be always top-grafted. It bears, alternately, heavy and light crops, seldom failing entirely.

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The fruit is of fine size and great beauty, almost always fair, with an exceedingly pleasant, aromatic flavor; and although it cannot be called rich, it will perhaps suit more palates than almost any other fruit of its season. It never shrivels, and will keep, in a good cellar, till June or July—a season of the year when fruits always command an exorbitant price.

THE BEST TWENTY VARIETIES OF APPLES FOR AN ORCHARD OF ONE HUNDRED TREES.

In answer to the query, "What are the best twenty varieties of apples for an orchard of one hundred trees, for family purposes," the following list is reported:

Early Harvest,	6
American Summer Pearmain,	3
Red Astrachan,	3
Bough,	3
Summer Queen,	3
Late Strawberry,	4
Gravenstein,	5
Fall Pippin,	5
Fameuse,	4
Rambo,	4
Ladies' Sweeting,	6
Belmont,	6
Rhode Island Greening,	4
Yellow Belflower,	12
Esopus Spitzenburg,	6
Swaar,	6
Jonathan,	4
Hubbardston Nonsuch,	4
Roxbury Russet,	6
Northern Spy,	6
Total,	100

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In all ordinary cases this is the list that should be taken as a guide for the selection of varieties for family or farm orchards, as it will be found difficult to supply the varied wants of the kitchen, the dessert, and the social circle, during the year, with a list of varieties, much, if any, shorter than the above. In fact, from the manner in which the queries are propounded, we may fairly infer that this was also the supposition of the author of the circular.

As we remarked in a preceding article, the number of trees contemplated, will usually be much more than sufficient for a home supply, and, as few families will care to have a surplus of summer and autumn fruits, to be marketed during the busy season, the winter kinds should be largely in excess; and it may also be added, that the market is usually over-stocked with early winter varieties, which consequently sell at a low figure. In case of a short crop, the longest keepers answer very well for early or mid-winter use, while they can, if desired, be reserved for marketing late in the spring, when they invariably command remunerative prices. The true policy, therefore, would seem to be to plant largely of these varieties.

In the light of these suggestions, we will proceed to an analysis of the above list.

Early Harvest is conceded, all things considered, to be "earliest and best;" but one-half the given number of trees will furnish an ample supply for a family, during its continuance.

Following the above, the list includes Red Astrachan, Summer Queen and Bough, (probably Large Yellow Bough of Downing's Revised Fruits,) which ripen nearly together. As comparatively few persons value a sweet apple, except for baking, these three may be considered as strictly culinary varieties. The first two, certainly, will be inadmissible as dessert fruits, except with those who admire a liberal share of *acid*. For cooking, however, they are among the best. It would, therefore, seem desirable to substitute for

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one of these, a good dessert fruit, as, for instance, Early Joe, or Summer Rose, in place of Summer Queen; while, if we consider we are now in the peach, plum and berry season, we will find one or two trees of each sufficient for an ample supply.

American Summer Pearmain will follow these, and continue in season through September. Wherever it succeeds, no better dessert fruit need be desired; but it is supposed not to be very generally known, and the writer has seen specimens from the thin soils about Jackson, that were but miserable caricatures of the fruit when well grown. Should a substitute be desirable, it may be found in the Michigan Golden Pippin, which will be found more profitable, and, also, a good culinary sort, but hardly as fine for dessert.

With Late Strawberry, which is next on the list, the writer's experience has been comparatively short: but the reasons given in a preceding article seem to warrant its exclusion, in favor of Gravenstein, which covers the same season, and is confessedly its superior; and, as we are yet in the height of the fruit season, and this, and the preceding variety, will be in season together for some time, the number of trees of this sort may be somewhat diminished.

Fall Pippin is, in our climate, a fall and winter fruit; and, as it has so many desirable qualities of both tree and fruit, we will doubtless be warrantable in increasing the number of trees.

Fameuse, (Pomme de Neige, or Snow Apple,) is too well known to require lengthened comments. It is a hardy variety, a strong grower and good bearer; and, if it maintained the fairness of its fruit on full grown trees, it would be indispensable; as its great beauty renders it very attractive, though it is by no means rich. With the treatment bestowed by the great mass of cultivators, however,

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it rapidly degenerates in size and fairness, as the trees come more fully into bearing. A single tree is enough.

Rambo is liable to the same objections as the above, though, perhaps, not in the same degree. The tree overbears in alternate years, and the fruit, consequently, becomes small, and therefore, not popular. Two trees are sufficient.

Belmont has been fully discussed in a previous article. One tree is enough, unless it is previously known to succeed in the locality.

Hubbardston Nonsuch is a superior fruit, of first quality, large size and great beauty, but will not keep long; otherwise, it would be desirable to plant it largely.

The above four varieties are properly late fall and early winter fruits, with the exception of Rambo, seldom keeping beyond February. With the exception of Belmont, they are better adapted to the dessert than cooking.

Yellow Belflower, also, covers nearly the same season, and is eminently desirable where it succeeds, as the best, if not the only early winter cooking apple on the list; but the number of trees given is too great for that purpose. Let it be reduced to six, and the quantity of fruit will still be ample for family purposes.

Rhode Island Greening, which will be the next in season, is so well known, and so deservedly popular, as to need no comments. For the kitchen, the dessert, and the market, it is doubtless, one of the best of its season. Plant ten trees.

Esopus Spitzenburg is a superior fruit; but its profitableness is doubtful, as well as its hardiness. Plant five trees, for home use.

Jonathan is a variety of the same class as the above, usually not quite as large, but a great bearer, and the fruit hardly equal to it in quality. A very slender grower, and hardy. Its great beauty will render it a favorite in the

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market. It is believed to be but imperfectly known in the State. Would plant five trees.

Swaar has been already discussed. Notwithstanding its overbearing and the consequent unfairness of the fruit, its exceeding richness, as well as its keeping qualities, render it next to indispensable in a fruit orchard. Room can be afforded for three trees.

Roxbury Russet is a miserable sprawling grower, and has proved itself tender during the past severe winters; but, if grafted, at standard height, these objections are obviated. This is pre-eminently *the* cooking variety for the spring months, and, as it comes to market among the latest, it should be planted rather largely—say ten trees. The fruit *must* be kept from the air, to prevent shriveling; as otherwise, it becomes nearly worthless.

Northern Spy has been already discussed. Its reputation is yet too doubtful to warrant extensive planting. Two or three trees may do, in hope that it will do better with age.

Ladies' Sweeting, as stated heretofore, is not generally known in our State. It is a candidate for the place so long held by the Talman Sweeting. From its reputation elsewhere, it will doubtless prove a worthy successor of that old popular favorite, as a winter and spring baking apple. Seven or eight trees will yield an abundant supply.

In place of Late Strawberry, and to make up for the diminution of the numbers of other varieties, it is proposed to plant the Red Canada, (Steel's Red Winter of Wayne County,) a very long keeper, which, during a trial of thirty years in this region, has won the reputation of being the most profitable variety in cultivation, as a home and market fruit. By this exchange of varieties we diminish the amount of fall fruit, and bring on a surplus which may be disposed of at any time prior to June. Twenty trees of this variety are required to make up the specified number.

The list, with the proposed changes, and with the vari-

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eties arranged as nearly as possible in the order of maturity, will stand as follows:

Early Harvest,	3
Red Astrachan,	2
Large Yellow Bough,	2
Early Joe,	2
American Summer Pearmain,	3
Gravenstein,	3
Fall Pippin,	8
Pomme de Neige,	1
Hubbardston Nonsuch,	4
Rambo,	2
Belmont,	1
Yellow Belflower,	6
Rhode Island Greening,	10
Esopus Spitzenburg,	5
Jonathan,	5
Swaar,	3
Northern Spy,	3
Ladies' Sweeting,	7
Roxbury Russet,	10
Red Canada,	20
Total,	100

It will be observed, in scanning this list, that it is destitute of sweet apples, from about the beginning of September to mid-winter, when Ladies' Sweeting comes into use. To supply this lack, it would perhaps be well to omit Pomme de Neige and Belmont, which are not really needed to fill the season, and substitute Jersey Sweet and Munson Sweet; which would fully supply the deficiency. In practice, however, the writer, in making up a family orchard, would increase the number of varieties by the addition of a few amateur fruits, such as Early Strawberry, Maiden's Blush, Keswick Codlin, St. Lawrence, Michigan

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Golden Pippin, Hawley, Dyer, Norton's Melon, Wagener and Golden Russet.

BEST VARIETIES OF APPLES FOR A MARKET ORCHARD OF ONE THOUSAND TREES.

The planting of an orchard for market, especially on as large a scale as this report contemplates, is a matter of much moment; and the list of kinds appropriate for the purpose must necessarily vary with the locality, and also with the object aimed at by the planter. If located near a good market, and aiming to make this his sole business, he may find it most profitable to plant a succession of varieties, to be marketed as they mature, and thus supply constant employment.

This seems to have been the purpose had in view in making up the fourth list of this report, which is as follows:

Best varieties of Apples for an Orchard of one thousand trees, for the market.

Early Harvest,	50
Red Astrachan,	50
Early Strawberry,	25
American Summer Pearmain,	25
Early Joe,	25
Late Strawberry,	25
Gravenstein,	50
Fameuse,	50
Porter,	25
Rambo,	50
Talman Sweet,	25
Ladies' Sweeting,	25
Belmont,	75
Vandevere,	50
Baldwin,	25
Red Canada,	75
Rhode Island Greening,	75

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Jonathan,	50
Yellow Belflower,	75
Hubbardston Nonsuch,	25
Westfield Seeknofurther,	25
Roxbury Russet,	50
Northern Spy,	50
Total,	1,000

It should be borne in mind that this list is intended for a *Market Orchard;* hence, in making the selections we are to inquire, not which are the finest fruits, but which are the most saleable, and (to use a common expression) which *pay the best.*

Early Harvest and Red Astrachan are well chosen varieties to open the season, but, if we reflect that the earliest fruits are short lived, and, therefore, must be disposed of at once, whatever may be the state of the market, and that from an over supply it frequently becomes difficult to dispose of them at any remunerative price, competing, as they must, with the other summer fruits, we may well doubt the propriety of planting the early varieties as largely as the author of this list contemplates. The cultivation of the ground, and the care of the trees, also, will, at this season, consume a large amount of time, so that there need be no lack of employment.

Considering, therefore, that the early fruits must be marketed within so short a time, and that during the busy season it would seem preferable to diminish the number of these at least one-half; adding a corresponding amount to the winter varieties, which can be marketed more at leisure.

Early Strawberry is an exceedingly beautiful fruit, of fair quality, and keeps unusually well for so early a fruit, but it is decidedly too small for the market, while the tree appears to be a thin bearer till it has acquired considerable age. As a market variety, it is far less desirable than

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Red Astrachan, which comes into the market at the same time. It should, therefore, be excluded from the list.

American Summer Pearmain is recommended with a marginal note, substituting Summer Queen on light, warm soils. This and Early Joe, which is the next variety on the list, are strictly amateur fruits, very beautiful, but too tender to bear handling without the greatest care; while Summer Queen is a good culinary variety, in season with Red Astrachan, and out of season by the time its alternate is mature. The Pearmain is a very slow grower, and Early Joe is but little better. The three should be omitted, and their place supplied by some more profitable variety, such as Michigan Golden Pippin, Keswick Codlin, or Duchess of Oldenburg.

In every community persons will be found with a partiality for sweet apples, and as the list is deficient in this respect, it may be well to add a few trees of Large Yellow Bough.

Late Strawberry and Gravenstein, as stated in a previous number, cover nearly the same season; while the latter is a larger, finer, equally beautiful, and the tree a better grower. It should, therefore, be retained to the exclusion of the former.

Fameuse is entirely unworthy of a place among profitable varieties, for reasons stated in previous numbers.

Porter is said to be one of the most popular apples in Boston market, and it also does very well here, but it is by no means equal to Michigan Golden Pippin, to which it is very similar, except that it is a couple of weeks later, coming in between that and Gravenstein, at a season when it is not needed. It should therefore be dropped.

Rambo and Belmont have been discussed in previous numbers, and can by no means be considered as generally profitable. They should, doubtless, be omitted.

It may be necessary to add here the Fall Pippin, or

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some similar fruit, to fill the hiatus between Gravenstein and the early winter fruits.

Talman Sweeting is universally known and valued as a winter baking fruit, and well deserves the position given it. Its chief fault is a habit of overbearing, for which reason the fruits are undersized.

Ladies' Sweeting is a finer variety than the above, and may be kept somewhat longer: should it on further trial, sustain its present reputation, it might appropriately assume the place of the preceding.

Vandevere (probably New York Vandevere, or Newtown Spitzenburg,) may be a profitable market fruit, as it is beautiful and excellent, and said to be productive; but it has hardly yet established a general reputation in this State. It is introduced with a marginal note, substituting Newtown Pippin in its place on stony, calcareous soils. This substitution may be warrantable in some portions of the State, but the writer is not aware of a single instance where this variety has shown itself even *tolerable*, as a market fruit in the entire northwest.

Baldwin is a very popular market fruit in New England, and, at a meeting of the fruit growers of Western New York, last winter, several members recommended to plant *only* this variety for market. It also grows and bears well in this State, but the tree has proved tender during our late severe winters, and the fruit is subject to the bitter rot in some localities. Its great vigor, fine habit, and early bearing, however, are of compensating qualities, and it should be planted even more largely than the list prescribes in localities where it is known to succeed.

Red Canada, so far as tried, appears to succeed perfectly in this State; and the number in the list might, with profit, be doubled or even quadrupeled; as it can be marketed in fine order, and with but little waste, any time from February to June.

Rhode Island Greening, also, will bear a similar increase.

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Jonathan is not yet fully tested in the varied soils of this State, but will probably deserve the position assigned to it, when generally known and approved.

Yellow Belflower should not be recommended for market, except on dry or sandy soils, and in the immediate vicinity of the market.

Hubbardston Nonsuch and Westfield Seeknofurther are both fine fruits, and it would be difficult to determine which is the most profitable; but the greater size and beauty of the Nonsuch will give it the preference, and as it would seem desirable not to increase the number of varieties except in compliance with an obvious want, the Seeknofurther should be dropped.

Roxbury Russet will prove the main reliance as a cooking apple, after March, and should, therefore, be more largely planted than the list contemplates.

Northern Spy needs to establish a better reputation to be worthy of a place upon the list.

The list amended in accordance with these suggestions would stand about as follows:

Early Harvest,	25
Red Astrachan,	25
Sweet Bough,	25
Michigan Golden Pippin,	25
Gravenstein,	50
Fall Pippin,	50
Talman Sweeting,	25
Ladies' Sweeting,	25
Hubbardston Nonsuch,	50
Vandevere,	50
Rhode Island Greening,	100
Baldwin,	50
Jonathan,	50
Roxbury Russet,	150
Red Canada,	300
Total,	1000

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It may be desirable to provide a supply of autumn sweet apples; in which case one of the two winter sweets may be omitted, and its place supplied by Jersey Sweet, Munson Sweet or Bailey Sweet.

The above list of varieties has been considered in reference to its adaptation to locations near a convenient market. But inasmuch as the cities that furnish our chief markets are situated, generally, upon navigable waters, and, therefore, usually, in regions illy adapted to fruit growing, they are largely, if not mainly supplied from comparatively remote points, where the character of the country is such as to promise immunity from some of the casualties to which the crops would otherwise be subject.

To persons thus located, the perishable nature of the early fruits, and the disproportionate expense of marketing them in small lots, operate as a check upon the planting of such, and in favor of a more extensive planting of later varieties. Most orchardists, also, find it desirable, and, in fact, necessary to unite fruit growing with farming; by which means they find themselves fully employed during the season of marketing summer and autumn fruits, and are therefore induced to plant exclusively winter varieties.

The choice of varieties for orchards, under these circumstances, is, frequently, still further influenced by the facilities for transportation to market. A person who is obliged to rely upon private conveyance, will find it desirable to plant a succession of varieties, which can be disposed of at his convenience, during the winter and spring; while a location along our railroads or navigable waters, whereby the producer can transport and market a whole crop at once, will operate as an inducement to plant very few varieties; perhaps but a single one.

In case a succession of winter varieties is desired, it will be found advantageous to plant sparingly of the early winter sorts, increasing the number as the varieties increase in durability; which will enable the grower to keep back

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large quantities, should the state of his business, or of the market, render such a proceeding desirable. In all cases, where fruits are to be marketed in large quantities, it is well to remember that the fewer varieties the better.

Under such circumstances, the following list will prove desirable:

Fall Pippin,	50
Hubbardston Nonsuch, Vandevere of New York, or Westfield Seeknofurther,	100
Rhode Island Greening,	200
Roxbury Russet,	250
Red Canada,	400
Total,	1000

Where the grower has access to a railroad or navigable water, the following varieties will be found most profitable, and, where they are all successful, should be chosen in the order here named:

1st, Red Canada; 2d, Rhode Island Greening; 3d, Roxbury Russet; and the best pecuniary results may doubtless be expected, under these circumstances, from planting the entire thousand trees of a single variety, provided, that variety is adapted to the soil in which it is planted.

It is well here to remark, that Red Canada is a very slender grower, and should, therefore, be grafted on strong stocks, at standard height. Roxbury Russet, also, is an irregular, spreading variety, and somewhat tender if worked low, for which reasons it should be grown in a similar manner.

THE BEST PEARS FOR FAMILY USE.

In answer to the queries, "What six and twelve varieties of the Pear are best for family use, on the pear stock? What varieties on the quince stock?" Doctor Underwood submits the following lists, viz:

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Best six varieties of Pears for a Pear Orchard for family use.

Bartlett, Flemish Beauty, Belle Lucrative, White Doyenne, Seckel, Winter Nelis.

Best twelve varieties for family use, of Pears.

Bloodgood, Tyson, Dearborn's Seedling, Bartlett, Flemish Beauty, Beurre d'Anjou, Belle Lucrative, White Doyenne, Sheldon, Seckel, Lawrence, Winter Nelis.

Best six on Quince stocks.

Tyson, Louise Bonne de Jersey, Belle Lucrative, Duchess d'Angouleme, Beurre Diel, Beurre Easter.

Best twelve varieties on Quince stock.

Tyson, Rostiezer, Belle Lucrative, Louise Bonne de Jersey, Duchess d'Angouleme, Stevens' Genesee, White Doyenne, Urbaniste, Beurre Diel, Glout Morceau, Vicar of Winkfield, Beurre Easter.

An examination of these lists will show that the varieties have been selected strictly with reference to their valuable qualities, with no attempt to secure a succession. In scanning the first list we shall discover that it opens the season with the Bartlett, which, in this climate, commences to ripen about the middle of September, and closes with the Winter Nelis, which will be out of season by the first of January; so that the fruits on this list will only cover about three and a half months; while, during a portion of the time, three or four of the varieties will be in season at once. For what reason the Seckel is placed here it is difficult to imagine, as it has nothing but its flavor to recommend it, while on the other hand, it is the smallest of pears, and usually very tardy in fruiting. In the writer's vicinity, Swan's Orange and Sterling would be considered preferable to any two on the list, with the single exception of Bartlett.

The second list opens the season, about the last of Au-

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gust, with Bloodgood, Tyson and Dearborn's Seedling, which mature within a few days of each other, and close with Lawrence and Winter Nelis, about New Year. It is objectionable from the consideration that as many as five or six of the varieties mentioned will be in season together, while more than a month at the commencement of the pear season, and several months of the winter and spring, are totally unprovided for. The introduction of such tardy bearers as Tyson and Seckel is also objectionable, as few persons have the patience to await the tedious process of fruiting, although they are of the highest character when in bearing. It is difficult to imagine why such long keepers as Beurre Gris d'Hiver Nouveau, Doyenne d'Alencon, and others, which might be used to prolong the season of this fruit several months are passed by.

On the list of the best six for cultivation on the quince, are two varieties that are not generally recognized as successful on that stock, viz: Tyson and Belle Lucrative. Tyson is recommended by the Pomological Society for general cultivation on *free* stocks, but not for dwarfs. With the writer, it has hardly done as well on the quince as Madeline, which is, confessedly, unsuccessful on this stock. Belle Lucrative is generally held to be successful for a few years only, although Mr. Field, in his recent work on pear culture, gives it his approval.

It would seem that both these lists, for quince stocks, would be improved by substituting Rostiezer for Tyson, as an August variety, and instead of Belle Lucrative or Stevens' Genesee, adding Beurre Langelier or Doyenne d'Alencon, thereby securing an extension of the season till April or May.

As all the varieties included in these lists will reappear in subsequent ones, the discussion of the relative merits of each will be found in a future page.

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BEST PEARS FOR AN ORCHARD OF ONE HUNDRED TREES.

The following are reported as the "Best Varieties of Pears, on pear stock, for an orchard of one hundred trees:"

Madelaine,	3
Bloodgood,	3
Dearborn's Seedling,	3
Tyson,	3
Rostiezer,	3
Bartlett,	10
Flemish Beauty,	10
Beurre d'Anjou,	5
White Doyenne,	15
Belle Lucrative,	5
Oswego Beurre,	5
Sheldon,	5
Buffum,	5
Seckel,	10
Lawrence,	5
Winter Nelis,	5
Beurre d'Aremburg,	5
Total,	100

The pear has been planted, in this State, only to a limited extent, and very little of the experience of cultivators of this fruit has been given to the public. The writer, therefore, is obliged to rely largely upon his individual experience, and the general reputation of the fruits in question.

In an orchard of the extent contemplated in the above list, the trees, when once fully in bearing, would produce a large surplus for the market. With apples, it was thought desirable that such surplus should consist of winter varieties. With pears, however, especially at the west, there has never been a supply in the market of winter sorts, and there is consequently no demand for

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them. The surplus of this fruit should, therefore, consist of summer and autumn varieties. Indeed, it becomes the orchardist to consider the subject well before planting this fruit for the market, as although one of the most profitable of investments, when conducted under suitable circumstances, the chances of failure are far greater than with the apple.

The following are some of the causes of failure in the planting of this fruit:

It is decidedly fastidious in its choice of soils, and oftentimes the best chosen localities fail to suit all varieties.

It is impatient of the neglect to which so large a proportion of our orchards are subjected, whether it be of cultivation or of pruning.

It is subject to more diseases than the apple, among which we would mention fire-blight in its various forms, the premature dropping of the leaves, and canker.

The earlier varieties are exceedingly short lived, and *all* require much care and experience, for the proper management of the ripening process.

Much skill will be needed with the earliest varieties, especially if the market be not readily accessible, to enable the grower to get them off his hands in good order, and before they shall decay at the core.

Finally, many varieties are such tardy bearers as to severely tax the patience of planters, and to furnish but too much ground for the adage, "He that plants pears, plants for his heirs."

On the other hand, when these difficulties are properly met and provided for, such a plantation will doubtless yield an abundant return for the additional expense and risk incurred.

The first six varieties on the list, (Madelaine, Bloodgood, Dearborn's Seedling, Tyson, Rostiezer and Bartlett,) are excellent and well known varieties, constituting a perfect succession in this climate, from sometime in July, to the

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last of September. They are, however, not without their faults. For *orchard* culture, (as is here contemplated,) we need a better grower than Bloodgood, and, for market, a more beautiful fruit. Dearborn's Seedling is decidedly too small, and Tyson is too tardy a bearer for these days of magnetic telegraphs and Young America. Its place is on the quince. It is however very prolific when once in bearing. Bartlett enjoys the enviable notoriety of occupying a place on every list reported to this Society; and its number might even be increased with great propriety.

Flemish Beauty is a fine, vigorous, hardy tree, a tolerable early bearer, and the fruit large, beautiful and good; but it is so short-lived that it will seldom much outlast the Bartlett. It will, especially if allowed to ripen on the tree, often become utterly worthless, before the eye can detect any sign of decay. As it is not needed to complete a succession, it would be well, (at least in this region,) to drop it and plant instead the same number of Swan's Orange; a variety equally vigorous, hardy and prolific, coming into bearing very young, always of fine quality, and large size, and keeping through October.

Beurre d'Anjou is supposed to be very little known in this State. So far as it has been tried at the east, it meets with unqualified praise, and will, probably, sustain the position assigned to it in the list.

White Doyenne and Belle Lucrative (Fondante d'Automne,) are known standard sorts and will bear planting to almost any extent.

Oswego Beurre is a fine late variety, not supposed to be extensively tested in this State. The fruit, in the writer's grounds, has been known to crack—would prefer Swan's Orange for profit.

Sheldon is one of our newer native pears, originating in Western New York. It is recommended by the Pomological Society for general cultivation, but although it may

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ultimately prove to be all that we expect, it is yet too soon to consider its character as established in our State.

Buffum is one of these varieties which, without claiming to be of the highest quality, have so many desirable characteristics as to be eminently deserving a place on the list.

Seckel is a fine, hardy, beautiful growing tree, and the fruit has long been considered the standard of excellence. There are, however, two serious drawbacks upon its character. It is a very tardy bearer, and the fruit when produced is so small as to be only endurable on account of its superior quality. In fact it is strictly an amateur fruit. The number should be diminished at least one half in favor of some more profitable variety.

Lawrence is an excellent and profitable variety. According to Field's Pear Culture, it may be ripened any time from November to March, which, if true, adds to its value as a member of the list, as it is the only variety that will keep much beyond January.

Winter Nelis may well be called (as it sometimes is,) Winter Seckel; as, to a person acquainted with the Seckel, this name gives a very just idea of its character. It is exceedingly prolific and would doubtless become a favorite market fruit were it not for its awkward habit of growth.

Beurre d'Aremburg is one of the richest and highest flavored of our winter pears, and appears to succeed well in this State. At the recent meeting of the Pomological Society a proposition was made to strike it from the list for general cultivation, but it was negatived. It is said to be a poor grower, and to canker badly at the east. In the writer's grounds, however, it is liable to neither of these objections.

In this immediate vicinity the Sterling Pear would be preferred to any other variety of its season, to plant for profit, as it is a strong, hardy tree and the fruit very beautiful, and of fine size. It would come in between the Bloodgood and Bartlett.

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It should doubtless be a leading object, in planting a family orchard, to distribute the varieties over as much of the season as possible. For this purpose it might be desirable to add to the list a few trees of Beurre Gris d'Hiver Nouveau and Doyenne d'Alencon, thus prolonging the pear season to April.

The list of Pears on Quince Stock, recommended for an orchard of one hundred trees, is as follows:

Tyson,	5
Rostiezer,	5
Belle Lucrative,	10
Stevens' Genesee,	5
Louise Bonne de Jersey,	25
Duchess d'Angouleme,	20
Glout Morceau,	5
Beurre Diel,	10
Vicar of Winkfield,	5
Beurre Easter,	10
Total,	100

This gives a fine succession from the last of August to April. Taken as a whole, it is objectionable from the fact that the supply of fruits is not properly distributed over the season; the winter, from November to April, a period of four months, being allowed only the produce of twenty trees; while the earlier portion of the season, embracing not more than three months, is allowed eighty trees, notwithstanding this is during the height of the general fruit season. It should however be remarked, that there exists in the community generally, a disinclination for the cultivation of winter pears; and the list was perhaps so framed in compliance with this feeling. This notion has doubtless grown out of the fact that winter pears, if kept in open vessels, shrivel and become tough and worthless; while the idea has been heretofore promulgated and generally believed, that they could only be ripened by a tedious and

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expensive process. This dogma, however, may now be considered as exploded, as, with most varieties, it is more recently found that the ripening process can be perfected with no more difficulty than with russet apples. As the people become indoctrinated with this idea the cultivation of winter pears may be expected to increase, until as with the apple, the greater share of the fruit produced shall be of this season. However this may be, it would seem highly desirable that a much larger proportion of the list should consist of winter varieties, inasmuch as we can hardly give too great a variety to the winter dessert, which, so far as fresh fruit is concerned, is mainly limited to the apple, the pear, and, possibly, to a limited extent, the grape.

Stevens' Genesee, which is next in season, was added to the rejected list at the recent session of the Pomological Society. It proves a hopeless failure in New England, and some other eastern localities. In our State it is a very tolerable fruit—in many places excellent. It has, however, one serious drawback everywhere—a disposition to rot at the core. As a dwarf it does very well, but is not on the Society's list.

Belle Lucrative (Fondante d'Automne) will come to maturity next, about the last of September. The quality of the fruit is unexceptionable, and it is recommended by the Society for quince stocks, but some growers complain that it fails after growing well a few years.

Louise Bonne de Jersey comes next, and is well known as always reliable on this stock. It is very appropriately put down for one-fourth of the whole number.

Duchesse d'Angouleme is one of the finest growers on the quince, and under high cultivation, often produces fruit of enormous size; but it is accused, by some persons, of dropping its fruits before maturity. It is a variety that should be grown *only* on the quince, but it can hardly be said to have established a reputation for profitableness.

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Beurre Diel, which will now be in season, is an excellent late autumn fruit, well worthy of a place on the list. It is a stout grower, with long, twisting shoots, and requires severe shortening for several years.

Vicar of Winkfield is a strong and beautiful grower, and appears to be eminently successful as a dwarf. It is not of the highest quality, but it has so many good points that it can hardly be considered second to any other winter variety.

Glout Morceau is one of the best growers on the quince, and, on that account, is preferred by many as a stock for double working. It is a tardy bearer, and even on the quince, it is claimed that it will not perfectly mature its fruits till it has acquired considerable age.

Beurre Easter will be the last in season, and if it is to be the sole reliance for the late winter and spring supply, its numbers should be largely increased; as it will cover a space of three months when no other pear will be in season. It is liable to the charges of unprofitableness and difficulty of ripening, in some localities. Doyenne d'Alencon—a variety of similar season, is by many thought to be preferable.

The list would also be improved, at least *in extent*, by the addition of an earlier variety; since we have pears in cultivation that ripen nearly, or quite, a month prior to any given therein. The probable reason why this was not done is that we have no varieties earlier than Rostiezer, that are unquestionably successful upon this stock. Bloodgood, which ripens about the first of August, is tolerably successful, and a fruit of excellent quality. Amire Jeannet, although placed on the rejected list for its small size and fleeting character, ripens so early as to be desirable in an orchard so large as the one contemplated; and so far as the writer has tried it, it promises to do very well as a dwarf. By the introduction of these varieties

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into the list, the pear season will be made to commence from four to six weeks earlier.

The list given, so far as the choice of varieties is concerned, is, in the main, excellent.

Rostiezer, which is the earliest variety on the list, is a strong, spreading grower, and *must be* severely shortened, for several seasons, to establish a compact head. The fruit, though small and unattractive, is of excellent quality.

Tyson will be the next in season. With the writer, it has not done well on this stock, and it is believed to be, generally, considered as no more than tolerably successful as a dwarf. The Pomological Society do not recommend it for this stock. It is, however, difficult to fill its place and season, with anything else of known and established reputation, adapted to this stock.

PEACHES—THE BEST VARIETIES FOR ORCHARDS IN MICHIGAN.

The remainder of this report is devoted entirely to Peaches, of which the following are the lists recommended:

Best six varieties of Peaches for a Family Orchard.

Early York, serrate, Coolidge's Favorite, Crawford's Early, Grosse Mignonne, Old Mixon, free, Crawford's Late.

Best twelve varieties of Peaches for a Family Orchard.

Early York, serrate, Early York, large, Coolidge's Favorite, Crawford's Early, Jacque's Rareripe, Grosse Mignonne, George IV, Large Red Rareripe, White Imperial, Old Mixon, free, Bergen's Yellow, Crawford's Late.

Best varieties of Peaches for an orchard of one hundred trees.

Crawford's Early,	20
Early York,	10
Coolidge's Favorite,	10
Jacque's Rareripe,	5

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Grosse Mignonne,	10
Old Mixon, free,	10
Large Red Rareripe,	10
White Imperial,	5
Crawford's Late,	20
Total,	100

In the same proportion for an orchard of one thousand trees.

It will be observed that "Early York, serrate," and "Early York, large," of the first two lists are represented in the last list by "Early York." This vagueness is very objectionable in so important a list, as we are left to guess which variety is intended. We may with some probability infer that Serrate Early York is intended, as that variety is placed among the best six for a family orchard. George IV and Bergen's Yellow, which enter into the second list, are also omitted in the final one. With these exceptions, therefore, our strictures may be confined to the final list.

Serrate Early York is the earliest peach of much value in this climate, ripening from the first to the fifteenth of August. In common with all the serrate varieties, it is somewhat liable to mildew; and it is also somewhat open to the charge of unproductiveness. A variety received by the writer from the State of New York, under the name of Early Slocum, has proved far more productive, and is also more beautiful. It is a few days later and of somewhat inferior flavor.

Large Early York is also comparatively unproductive, though of excellent quality.

George IV is a fine grower, and the fruit of fine size, and of the finest flavor, but its incorrigible unproductiveness limits it to amateur collections.

Bergen's Yellow is claimed to be the best of all the yellow fleshed varieties, and the fruit, *when produced*, will probably sustain this character. The writer has had ten trees

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of this variety under cultivation for the last ten years, from which he has never obtained more than five or six fruits.

Coolidge's Favorite immediately follows Serrate Early York. It is a crenate variety, and in common with all of its class, exempt from mildew. It is unusually productive, and the fruit is exceedingly rich and beautiful.

Grosse Mignonne has a world-wide reputation as one of the largest and finest of peaches, and probably deserves the place assigned it. Many spurious varieties are sold under this name. The writer has never been able to obtain the true. This is one of the very few European kinds that have proved valuable in this country.

White Imperial is a fine, healthy tree, exempt from mildew, and is a beautiful and excellent fruit for preserving. It is also unusually hardy and productive. Its color renders it undesirable for the market, which is probably the reason why so small a number is recommended.

Crawford's Early ripens nearly with the above, and is, very properly, recommended to be planted largely, as it is one of the most healthy, vigorous and productive varieties in cultivation; while the quality, size and beauty of the fruit, eminently fit it for either the family or the market.

Large Red Rareripe (Red Rarepipe of Downing,) is a very fine early peach, in season before the above. It is comparatively unproductive and subject to mildew; and as it is in season with several others on the list, it would perhaps be better to put in its place the late Red Rareripe which comes in after Crawford's Early, and is larger, richer and if possible, more beautiful than the fruit in question; while the tree is more productive, and exempt from mildew.

Old Mixon, free, will be next in season, and is doubtless worthy of the place assigned it on the list. The writer's trees have proved spurious, and he has no personal acquaintance with the fruit.

Jacque's Rareripe has many fine qualities of both tree

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and fruit. It is more productive than most varieties, and is probably worthy of an increase of number.

Crawford's Late is a very large and very late variety, and for those reasons, and the valuable qualities of the tree, it is eminently worthy of a place on the list. With the writer, however, it has not proved as productive as many others. It would be well to diminish its number, and as some variety that will outlast it is desirable, plant instead Tippecanoe Cling which will keep a month longer, while it possesses a combination of excellent qualities, both of tree and fruit, seldom to be met with in this climate among late peaches.

For a market orchard of one thousand trees, the report recommends the same list, merely multiplied by ten. Although the list is by no means large, this is hardly in accordance with the habit of the times—that of using as few varieties as possible. The varieties given are far from being all equally profitable, and it would seem to be the dictate of sound policy to select those that have been found to be the most profitable, and to plant the orchard of them exclusively. The solution of the question of profitableness will depend very much upon the market in which the product is to be sold. The cities of Detroit, Toledo, Chicago and other easily accessible places, are now supplied with early peaches from the south by steamers and railroads, in advance of the ripening of our home crop; so that there is less inducement for the planting of very early varieties except for local markets.

Under these circumstances, it will doubtless be found preferable to plant largely of the very late varieties, and of such other varieties as have proved hardy, vigorous and steadily productive. If we make up a list with reference to these circumstances, we may find several superior very late clings that have many desirable qualities to recommend them, but since peaches of this class are not favorites in the market, they should be planted very sparingly,

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if at all. Among the very late free-stone varieties the writer has succeeded best with Poole's Late Yellow, but Crawford's Late has a very high reputation, and will perhaps prove generally successful in the State. If we select for profit *alone*, without reference to season, we will hardly need to look beyond Crawford's Early. Indeed, in planting extensively, the number of this variety need be limited only by the capacity to market the produce while in season.

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AN ARTICLE

ON THE

BREEDING AND MANAGEMENT OF SHORTHORNS,

BY FRANCIS TALLANT,

In London Farmer's Magazine.

At the present time, when the breeding of Shorthorns is greatly on the increase, little apology is required for the remarks on their treatment which we are about to offer. I shall not enter into any inquiry as to the source or origin of this breed of cattle; suffice it to say that at the time I write, Shorthorns are justly recognized as the best pure breed of cattle in the United Kingdom, and command the most money at our public and private sales. Indeed the breeding of Shorthorns is not confined to farmers who breed them for profit, nor to noblemen and gentlemen who breed them for pleasure, or for exhibition at our national shows: it takes a place in our great commercial system, and has become a commercial pursuit. The demand for first-class animals to export to the United States of America, to Australia, and to all parts of Europe, has exceeded the supply, and resident agents of our transatlantic breeders are always ready to purchase good Shorthorns for future shipment. Special accommodation is provided on board the steamers and ships which carry these valuable animals. Captains are preferred who take an interest in the preservation of animal tribes; and such is the extent and variety of some cargoes of live stock now sent abroad, that the vessel may not inappropriately be styled a "Noah's Ark."

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In several parts of England, but more particularly in the North, calves are allowed to run with their dams, and suck at pleasure; care being taken that the dam has a sufficient supply of milk for the calf, and that the udder is sucked out clean, or drawn, once a day, to prevent disease. Calves will thus run with their dams six to eight months, and some are only taken away when the cows require drying previous to calving: by this time the calves have gradually weaned themselves. My objections to cows suckling their own calves are, that the cow is not so likely to come in season whilst the calf runs with her, and time is lost in breeding; that if the cow's milk should fail, it is difficult to wean the calf from her, after it has sucked eight or ten weeks, or induce it to suck another cow; and that in the winter months the majority of homesteads have not the requisite accommodation for cows and calves to lie together in shelter. Neither do cows take kindly to be milked by hand, after calves have run with and sucked them. The system I adopt and prefer is, to take the calf from the cow when it is three days old, put it in a warm and well-littered pen, and teach it to drink from the pail, giving it new milk direct from the cow twice a day. In two or three days the calf will learn to drink, the cowman carefully holding the pail to its head, with his fingers in the calf's mouth; and if it keeps in health, there is no further trouble in the matter. The calf should be fed at the same hour morning and evening, as nearly as possible, say 5 A. M. and 5 P. M.; and if two or more calves lie together, they should be tied up separately for an hour after being fed, or they will contract the habit of sucking each other, which is apt to produce flatulency and skin diseases, and renders them dirty in appearance. Should the calf be the first produce of a heifer, I let it suck her for ten or twelve days, and then remove it, as I think the heifer allows her milk to come more freely after being sucked for a few days, and there is less risk of disease in the

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udder. In the spring of 1856, a favorite cow calved five weeks before her time: the calf was small and weak, and unable to stand or to suck its dam. However, I procured an infant's feeding bottle, with india rubber nipple, and directed the cowman to feed the calf with new milk by means of this bottle, giving it a small quantity every two hours for the first three days, increasing the intervals of feeding as the calf gained strength. The cowman or his mate sat up several nights to feed the calf, and in three weeks we were able to dispense with the bottle, and had the satisfaction of seeing the calf drink from the pail. At fourteen months old this calf was sold by auction for more than 90 guineas. The bottle used was a glass one, and care should be taken to keep it sweet. Another case was similarly treated, and with equal success, so far as rearing the calf until it was a month old. Being winter, for the sake of warmth I let the calf lie with its dam, which had uncut hay in her manger. Finding the calf dead one morning, when it had been seen alive and sucking late at night, we carefully examined it, and detected a ball of hay lodged in the throat. I have no doubt the calf had eaten the hay, and having fallen asleep before it had passed the food into its paunch, the hay had suffocated it. When calves are born before their time, they sleep a great deal, and are only roused by cold or want of food. Calves cannot be too well littered, and their pens should be sheltered and warm, with good ventilation *above*. The floor of the calf's pen should be on an incline, to allow the urine to drain away, and the hot dung should be thrown out of the pen at least three times a week, and in confined places daily. At four months old the calf is gradually weaned from new milk by adding scalded linseed, which has been previously ground, beginning with a pint at each meal, and increasing the linseed until the milk is entirely withdrawn. The calf will drink linseed freely; and if the season is winter, it will be desirable to continue feeding

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with it until the calf is turned out to grass in May or June. I give a simple mode of preparing linseed tea for calves. One and a half lb. of linseed will make five gallons of tea. To one and a half lb. of ground linseed add a gallon of *hot* water—not boiling. In cold weather let it stand twenty-four hours, in warm weather twelve hours. Then add four gallons of water, and give it to the calves at the temperature and about the consistency of new milk. A six months' calf will drink six gallons per day, given at twice. When four months old the calf should have a little sweet hay cut into chaff, and a handful of ground oats mixed with it; also a few slices of Swede turnips, or, if *after February*, a few slices of wurzel daily. The proportions of food may, of course, be increased with the growth and condition of the calf; but the increase of turnips or wurzel should be very gradual, and not exceed one gallon per day up to eight months old, nor one peck per day up to twelve months old. When calves are first turned out to grass I think it desirable to house them at night, give them hay, and two lbs. of linseed cake per day. Nor would I withdraw the cake after the calves remain out at night, as I find it keeps young stock in health, and their skins and coats in a fresh and blooming condition. Many writers advocate the use of pea meal made into porridge for calves, and pea and bean meal, mixed with chaff, for yearlings. I have no wish to detract from the value of peas and beans as fattening food, but my experience proves that they are not proper food for young stock, more particularly for young *breeding* stock. I have little doubt that many cases of sudden indigestion and consequent inflammation, of "hoven," of diseased knees and joints, and stiff fore legs, are the fruits of indulging young stock with peas or beans in some form or other. Oatmeal may be largely given without fear of the consequences, and if the animal does not progress so rapidly as you wish, you will have the satisfaction of retiring to rest at night under no appre-

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hension of finding your favorite Shorthorn "blown up" and "a body" in the morning.

I have a decided objection to young stock being tied up during the winter. If possible, five or six yearling heifers should lie loose, in a warm and well-drained yard, with a roomy shed to feed in, and to shelter them from heavy rains and storms. Half a bushel of cut swedes, with sweet oat straw and hay mixed and cut into chaff, and from two to three lbs. of linseed cake per day, will keep the heifers in a fresh and thriving state. If hay is plentiful, the straw should not exceed one-third in proportion. If hay is scarce, and straw abundant, a little ground oats might be mixed with the chaff, and the hay and straw cut up in equal portions. Food should never be given in excess, and stock should clear out their mangers before they have a fresh supply. Should one of the heifers drive the others from the manger, and monopolize the oil cake, the lot may be tied up, for half an hour, to insure each animal having its share. The heifers should have the dirt cleaned off them daily; for if allowed to accumulate, the dirt adheres to the hair, which is eventually scraped off the animal, rendering her hind quarters as bare of hair as a clipped horse. The growth of long and silky hair, and the *preservation of it*, is a peculiar art in the "getting up" of Shorthorns for our national shows, and taxes the skill of first-class exhibitors to the utmost. Lice are frequently to be found on heifers at this age, and the stock should now and then be carefully examined, and the vermin destroyed. It is an error to suppose that lice are only found on animals which are poor and dirty. That cattle are more liable to vermin, and to diseases of the skin, when in a dirty and starved condition, I allow; but I have frequently found lice on heifers which have never known the cravings of hunger, and which have been kept as clean and sweet as carriage horses. The best application to destroy lice is a strong decoction of tobacco water, boiling the rankest

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tobacco you can procure. To one lb. of tobacco add eight gallons of water; boil and stir it; when a little cool pour in one pint of brown spirits of tar and one lb. of soft soap; stir all well up, and apply it when cool. Let a man effectually rub this mixture into the heifer's skin, more particularly on the neck, shoulders and rump ends, which are the parts usually infected by lice. The heifer should be kept in a shed until she is dry, and the mixture must not be washed off. A rub with a soft brush, or wisp of straw, the following day, will restore the natural appearance of the coat, and the disagreeable smell soon passes away. Mild, merciful ointment can be applied in bad cases to destroy lice, but the ointment irritates the skin, and causes the hair to come off, so that I prefer the tobacco mixture, even if two dressings are necessary. The horns of heifers between one and two years old also require attention. If they are not growing so kindly as is desired, let them be well filed on the *inner* side towards the forehead, and repeat the filing every two or three months. If the horns are long, saw off the tip ends, and file the points into shape. I object to the use of steel screws to horns, and giving them a turn daily to bring the horns forward, as they are rendered thick towards the root by this process, and a *thick* horn is more objectionable than a wide horn, or one that turns backwards. When the weather is at all favorable, the heifers should be turned into a sound pasture for a few hours during the day. A cold, bracing north wind will not hurt them, but I should avoid exposing them to a biting east wind, or to a cold rain. Heifers exceeding twelve months old will be coming "in season" usually every three weeks; and they should be removed from their fellows, and shut in a loose box till they are quiet, or a broken horn or slipped hip may be the result. Some breeders put their heifers to the bull at 15 months old, others at 20 months, and others not sooner than two years old. If a heifer is strong and healthy, I prefer serv-

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ing her at the age of 20 months, provided she would be down calving at a favorable time of the year. It is desirable she should calve in May, or early in June, as the heifer then has the advantage of a summer's run at grass, and the season of year is most favorable for cow and calf. July and August are objectionable months for heifers to calve in, owing to the heat which usually prevails, and the greater tendency to inflammation after calving. For this reason, I should let a 20 months' heifer pass for two months before I put her to the bull, rather than she should calve in the hot weather. A heifer served at 15 months is liable to be checked in her growth, and frequently proves a mean little cow; a heifer served at 20 months old is more likely to stand to her bulling, and to be a regular breeder afterwards, than one which is two years old before she is bulled, and with good keeping the growth of the former is not checked. The two years old heifer will be getting fat, if well bred, and frequently is very troublesome to get to breed. Of the means to be employed to insure a heifer being in-calf, I will speak presently. A cow usually goes 280 days, or 40 weeks, with calf. Should she exceed this time, she generally produces a bull calf. Assuming, then, that our heifer, 20 months old, is served and in-calf on the 1st of August, she will be due to calve on the 9th of May following; and if all goes on well, she will keep her time within three or four days under or over that date. A "calving-table" is given annually in that useful work, "Johnson and Shaw's Farmer's Almanac;" the calculations are made for forty weeks, and a reference to this table will save time in calculating dates. After the heifer has calved six weeks, if she is healthy and strong, she may again be put to the bull; and as soon as it is ascertained that she is *in-calf*, which will most probably be the case if she passes six weeks after being served without coming in season, I should advise her being gradually dried of milk, and put the calf to nurse. This will

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give the heifer a good rest, and by the time she is again down calving will have recovered her condition, and grown into a fine cow. But the heifer should not be dried until it is ascertained as correctly as possible that she is safe in-calf, as a heifer so dried is very difficult to be afterwards got with calf.

Similar shelter and yard room to that suggested for yearlings is also desirable for heifers in-calf. From three to six can lie together, according to the size of the yard and shed; but they should have room to move about freely. If such yards with open sheds do not exist, the heifers should lie in separate boxes at night, and be turned into a foldyard or paddock during the day. A mixture of hay and sweet barley or oat straw cut into chaff, from half a bushel to a bushel of sliced swedes, given at twice, and three lbs. of linseed cake per day, is my usual winter's food for heifers in-calf.

The linseed cake can be entirely withdrawn when the heifer is within three months of calving, if she is in good condition, and has a tendency to lay on flesh; but if otherwise, this moderate quantity of oilcake will help to keep her bowels open, and her body healthy, without making her gross. I should prefer reducing her supply of dry food, and mixing brewer's grains with the chaff, to taking off the oilcake altogether. In February I substitute wurzel for swedes, mixing the roots at first, and I do not exceed three pecks of wurzel at the two meals. In turning heifers in-calf together in a yard for the first time, they should be watched, to prevent fighting, and any vicious animal should be removed; the sudden attack of one heifer on another being quite sufficient to produce the "slip," which is so serious a drawback to the breeding of Shorthorns. The constant use of linseed cake, in addition to roots and mixed chaff, for winter food, may be considered expensive feeding for breeding heifers, especially by those breeders who turn their young stock into open

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yards for the winter, and give them a few turnips and straw only. That heifers will *live* on this low diet I do not deny, but they will not *thrive;* and linseed cake not only improves the condition of the animals, but it keeps them in health, and heifers when so fed are always fit for a purchaser's inspection. At no age does the Shorthorn show to greater advantage than from 18 months to 3 years; therefore it is sound policy to keep heifers in a fresh and blooming state, that the breeder may insure a high price if he has such stock to part from. Heifers can seldom be turned out to grass in the spring before the 1st of May; it is not desirable to leave them out for the night until all fear of frost is over, as much grass is checked and destroyed by stocking too early. Heifers are generally housed for the night by the 1st of October; but the weather must entirely guide the breeder in this matter. In fine and mild seasons, stock may remain in the fields until November, whereas heavy rains in the month of September may render it necessary to house your stock before Michaelmas day. The autumn of 1857 was remarkable for mild and dry weather, and for the great abundance of grass, enabling the breeder to let his choicest animals remain in the pasture day and night (with the exception of two or three days) until the last day of the year. In such a season, which we may not again witness for many years, I should prefer leaving the cattle in the fields to keeping them in the best arranged yards, as there is no food equal to grass for breeding cattle, and they should have it whenever it is to be obtained. When the grass is deficient in quality or quantity, the stock can have a little hay or linseed cake given them in the yards or fields; but I would on no account deprive them of exercise in fine weather, let the time of year be what it may.

If loose boxes and yards with open sheds are so necessary for the young and active stock, how much more essential are they for our heavy and sometimes unwieldy

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cows! and how frequently do we find them with a swelled knee, a bruised breast, or a slipped hip! The two former evils are the consequences of keeping them tied up; the latter is not unfrequently caused by the cow turning sharply round on being untied, and slipping down on the smooth brick floor of a cow-house. A cow-house is certainly a convenient place for cows to be in whilst they are *milked;* but all breeders who study the health of their cows will afterwards have them turned into yards, with a good shed in it, to shelter them from storms. I am persuaded that if cows were thus treated, we should have fewer complaints of pure bred Shorthorns being so tender, avoid thick knees, bruised breasts, the extremes of heat and cold, and preserve the rough, shaggy coats which are so much admired and esteemed by our best breeders. Some cow-houses which I have visited have been so confined for space, and crowded with cows, that the animals are constantly in a heated state; and I have seen the hair *shorn off the backs of cows*, owing to the profuse perspiration they were generally in. The unhealthiness of such places is sufficiently obvious. If we must have cow-houses, let them be large and well ventilated. The cow should have ample room to rise and lie down; and though her hind-quarters want to be a trifle lower than her fore-quarters, her rump should not drop into a gutter, as is too often the case. The drainage of the shed should be properly attended to; the roof should be high, and thoroughly ventilated. The draining and ventilating of buildings intended to contain a considerable number of animals is now so well understood, that no new erections need contain hot or foul air, if proper precautions are adopted.

Our heifer is now near calving her second calf, and, having been dried some months, she is fresh. Advantage should be taken of every fine day, should it be the winter season, to give her a run in the field, if only for two hours. If she is not a cow which will exercise herself, I should

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advise her having gentle exercise for at least an hour a day for two or three weeks before she is due to calve. When very fresh, and the season of the year warm, she can scarcely have too much exercise; but the cow must travel *her own pace*, nor must she be driven in the heat of the sun. A mild dose of physic once a week will also prove beneficial in such cases, but I am not an advocate (as a rule) for bleeding cows when near their calving time. I have known cows heavy in-calf fed for exhibition, which have afterwards calved safely, and in warm weather. The cow is then driven out daily by a boy, who gives the animal a half-mile walk the first journey, and gradually increases the distance to five or six miles a day. Frequent doses of mild physic are also necessary, and are sometimes given on alternate days for a fortnight.

We must now assume that the heifer, instead of being in-calf, breaks her bulling, and comes regularly in use. In this case, about a week before the heifer is coming into season, we should bleed her, give her a strong dose of physic—chiefly sulphur, Epsom salts, and treacle—and exercise her for an hour after putting her to the bull. Should this treatment fail, let her pass once, and serve her at the end of six weeks, keeping her on low diet; give two or three purging drinks, and plenty of exercise between. A change of bull is also desirable—particularly from an aged to a young bull—and to take special care that the cow is *willing to receive the bull.* I am inclined to think that many cows are served at the wrong time, and if they are shy breeders, the proper period for getting them in calf is missed. To save time, when the first symptoms appear, the cowman puts the cow into the bulling stocks, and makes her have the bull, if she is willing or otherwise. This practice cannot be too strongly condemned. If the bull is not savage, nor unsafe to have his liberty, he should be turned loose into a yard with the cow, and if she stands quietly, he may serve her well once, and then be removed.

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But if the cow will not stand well, it is better to wait an hour or two, and again put the bull to her, when she probably will be more ready. The breeding properties of cows vary. Certain strains of blood I have noticed which breed alternate years only, successive generations following suit. Other tribes produce a live calf annually, and you may reckon safely upon the daughter "standing" and breeding regularly as the dam. I need scarcely say how desirable it is to preserve and cultivate those strains which are most prolific, and to discard the shy breeders, unless their merits will compensate for loss of time. The most difficult cases to deal with are cows which have calved prematurely. The cow must have one or two cleansing drinks given her, and be allowed to go full two months beyond her proper calving time, before she is again put to the bull. If she is not quite clean and healthy, more time must be allowed her, and her body kept well open and cool. In the year 1855, six cows of a herd under my care, at different periods cast their calves. Of these cows, by pursuing the treatment here described, three resumed breeding, and produced live calves at maturity in 1856. One ceased to be in a breeding state, and was fatted. Another came regularly in season, was bulled at intervals for eight months, and did not stand. She was then sent to a distance, on foot, ran the round of several bulls, returned home, and was in use the same week; was served by a young bull, and stood, and produced a live calf at maturity, having lost 12 months' time. The sixth cow was similarly treated, but she never stood; and after exhausting the patience of ourselves and our bulls, she was sold barren. This cow differed from the preceding, inasmuch as she usually went *six* weeks between her bulling seasons, and I have known her to go *nine* weeks. Of these cows, one cast calf in the middle of January; two in February, within nine days of each other; and being tied up together, and fellow-cows, I had reason to believe one affected

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the other; a fourth slinked in April, a fifth in June, and the sixth in December. I could ascribe these mishaps to no particular cause beyond the one I have spoken of. If a cow which has calved prematurely does not come in season regularly—that is, every three weeks—I should have little hope of her breeding again; and should no special value be set upon her, it will be better to fat her at once. I should by no means discard a cow immediately, which has cast her calf, as I have known many which have subsequently bred with great regularity. The means employed by some persons to get cows to breed, almost exceed belief; the folly of the expedients being only equaled by the cruelty and torture to which the cow is subjected. Amongst other expedients to overcome nature's difficulty, which I have known to be tried, are—forcing the cow into a deep pond, after she had had the bull, and keeping her up to the neck in water for half an hour; swathing her rump and shape up tightly with cloths, and stopping her evacuations for six hours, a man standing guard over her; placing four 56 lb. weights across the cow's back, two either side, again swathing her, and not allowing her to lie down for several hours; and literally putting hot irons to her shape, immediately after she has been bulled. For the sake of humanity, I hope these cases are few and rare. I should indeed be astonished if cows treated thus ever bred.

We must now consider the cause of cows casting their calves, and the possibility of preventing this misfortune. A cow seldom gives much warning that she is going to cast calf, sometimes only two or three hours, and rarely more than twelve hours; so that if any certain means of preventing her slinking were known, it is too late to apply them with much hope of success. Indeed, the cow is generally so quick in this operation, that our first warning is finding the calf. This circumstance leads me to believe that the cause is usually sudden, and the effect immediate.

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Cows in-calf are particularly susceptible of *fright*, and some cases of slinking have so quickly followed storms of thunder and lightning, that I have been confident fright occasioned by the storm has caused the cow to cast her calf. A fright by strange dogs I believe to be a *frequent* cause of this mischief. Fortunate is the Shorthorn breeder whose farm is not contiguous to a town, and whose fields are not intersected by public footpaths. These "charming walks" for people with troublesome little dogs are I fear productive of much mischief to our breeding flocks and herds. The involuntary start which a cow gives when a gun is fired near to her, is another proof of fright, and this should be carefully avoided or guarded against. Some cows are vindictive and savage towards their fellows: such should not be turned out with in-calf cows, as the fright occasioned by a sudden attack of a savage cow may produce abortion. The sense of smell is particularly acute in the cow, and no carrion, butcher's offal, or dead game, should be thrown into yards cows are turned into, or remain in or near to pastures the cows frequent. Wounded game, dying and putrefying in the hedges or fields, may frequently be the unknown and unexplained cause of cows casting calf, as it is well known the smell of putrid flesh will produce abortion. Pigs should not be killed in the cows' yards, nor blood of any kind thrown where a cow can get at or smell it. The slaughter-house of a homestead should be as far removed as possible from the cows' yards and sheds. Rats should not be poisoned about premises, as they stench horribly when dead, and they may lie under the cow's nose, for aught we know. Cows advanced in calf should not remain in wet, undrained pastures, or lie in wet yards. I do not think with Skellett* "that the smell is of a *vegetable* nature" which offends the cow, but when cows are constantly out at grass, a variety of circum-

* Skellet on the Breeding Cow, and Extraction of the Calf. London: Sherwood, Gilbert and Piper, 1833.

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stances may at one time or other produce the "fright," to which I am far more inclined to attribute slinking. A further cause for cows slinking, not thought of in the time of Skellett, may be found in the journeys by railway which of late years have been so frequent. There can be no doubt that railways greatly facilitate the removal of cows from distant parts of the country, and gentlemen frequenting public sales, prefer buying cows in-calf, because they hope soon to have live produce. How often are they disappointed! The cow when purchased is probably six months gone with calf: she is shaken and frightened by her railway traveling; is perhaps turned into a field with a dozen cows, strangers to her, by which she is well hunted; is differently fed if kept in the homestead, and destroys the hopes of her new owner by calving prematurely. Extreme modes of feeding also tend to produce abortion. We as frequently hear of the cows of cottagers or small farmers casting calf, as those of their more wealthy neighbors. This is probably owing to their cows being turned on a naked common or barren pasture, where they pick up a scanty living, and not getting sufficient food for nature's requirements, they rapidly waste, the fœtus loses its vitality, and abortion ensues. On the other hand, excessive feeding must be avoided, as the cow's blood will become in a feverish and heated state, her body fat, heavy, and plethoric, engendering disease, which frequently results in her casting calf. Some of my suggestions for preventing cows slipping calf, or guarding against it, may strike the reader as being simple and unnecessary; but all who have had the care and anxiety of a herd of valuable cows will bear me out when I say, that nothing should be left undone, however simple, which may render your cows safe; for when one "slips," you know not how many may follow, owing to the sympathy in the animal organization; and no treatment, that I am aware of, will *prevent* the cow casting her calf, however soon her intention is

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apparent to the owner or his cowman. The slinking of a great number, or an entire herd of cows, within a few weeks, is not so frequent in pure-bred Shorthorns as in ordinary dairy stock; and I believe for this reason—the former will be put to the bull at any time of the year, and the cows are in various stages of gestation; the dairy cows, on the contrary, are generally bulled in the month of July, so that they may calve in the spring, and their calves have the advantage of fine weather and abundance of skim-milk. Many of the dairy cows will be in the same stage of pregnancy, and if, as I suspect, cows are more liable to cast calf at a *particular period of gestation*, the disease rapidly spreads through the herd, should an unlucky cow set the example. I have observed that cows are most subject to slip their calves from the 32d to the 38th week of their pregnancy; at this period, therefore, they cannot be kept too quiet, whether they are in the homestead or in the field. I have many times bled cows, and given them laxative medicine, when the first signs of slinking appeared; but only in *one* case have I successfully checked the disease. The heifer in question, which threatened to slink a month before she was due, ultimately calved eighteen days before her time; the calf lived, and both did well. In the above case, I bled the heifer at once, gave her a mild dose of physic, bran mashes and warm drink, and kept her in a quiet and retired place until she calved. As this heifer had cast her first calf when only four months gone, the danger was the greater of her slinking a second time. I extract from "Skellett on the Parturition of the Cow" the symptoms of slinking, which I have found very correct:—"Whenever a cow shows any symptoms of slinking, the first step should be to separate her from the rest of the herd, and to cut off all communication that may endanger this accident spreading. The first symptoms of slinking are known by the udder suddenly filling, giving a flush of milk, by the shape showing a red appearance, and turning

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loose and flabby, and the ligaments or couples on each side the rump giving way to a certain extent. When these appearances take place, the cow, after removing her to a place by her self, should be narrowly watched, in order to give every assistance, as well as to prevent the accident, if possible." Cows in-calf should at all times be kept quiet. I do not advise their running in rich feeding pasture, up to the knees in grass. I consider second-rate pasture good enough for breeding cows; and if they have to traverse the field for their food, so much the better. A constant supply of pure water in the the field is indispensable. When the herd is turned out to grass in the spring, the yearlings should be put into one field, heifers from two to three years old into another field, cows in-milk into a third, and the dry-in calf cows into a fourth. Nor should the cattle on any account be collected into one pasture when the owner or his visitors wish to inspect them. The utmost vigilance on the part of the men cannot prevent fighting and accidents when this is done.

Owing to the great heat which at times prevailed in the summer of 1857, I deemed it advisable to house the cows during the day, and the animals were thankful for the shelter. This course would probably be preferable to providing a shed in the field, for the cows to run under, as the flies might torment them, and cause the strong or vicious cows to gore the weak ones.

After calving, and when giving milk, cows should be well fed. If on inferior grass, two pounds of linseed cake per day should be given when the cows are brought in to be milked; and if any of them are *poor*, double the allowance of linseed cake, and give a quart of oatmeal with hay-chaff. For winter food, Swedish turnips are objectionable when the milk is required for cream and butter; but if the milk is given to the calves, the cow should have one bushel of cut swedes, given at twice, 3 pounds of linseed cake, and a quart of oatmeal per day, with as m uch hay-chaff as she

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can eat. Orange-jelly turnips, or drumhead cabbage, are good substitutes for swedes, when sweet cream and butter are required. In February, wurzel can be given instead of turnips, beginning with a small quantity, and never exceeding half a bushel at a meal. The value of wurzel as food for milking cows can scarcely be estimated, as it increases the supply of milk, and tends to keep the cows in health. Wurzel will keep well until midsummer (and some until Michaelmas,) so that, if the crop of grass is short, wurzel can be given to the cows once or twice a day until the pastures improve. But neither wurzel nor turnips should be given to cows in a *frozen state;* and in the event of these roots being frozen, cabbages, bran and brewers' grain can be substituted. Potatoes are considered good food for cows; but since they have been subject to disease, potatoes have not been sufficiently cheap for this purpose. As previously suggested, for heifers, the cows should be turned into yards during the day, (if they are kept tied up,) or better still, into a sound grass field near to the homestead, exercise being very desirable for them in cold weather. It is not advisable to expose them on cold wet days, or to searching east winds. Whether in the yards, sheds, or fields, cows should at all times have access to pure water; one or two strong rubbing posts are very useful in the yards and fields, and lumps of rock salt should be liberally placed in the mangers, for stock to lick at will. A *gradual* change of food for cows in-calf is always desirable, more particularly from dry food to moist, when the grass is young.

So many persons have written on the treatment of cows when in labor, and after calving, that I cannot add to the mass of information on this subject; but I may be allowed to say, that if the case appears favorable, and the presentation natural, the cow should be left to herself, in the field, if the weather is dry and fine, but not in the hot sun; nor should she be touched until the calf is sufficiently for-

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ward to be taken away. If the presentation is not natural, and the case beyond the skill of the master and cowman, it is far better to send for a veterinary surgeon, than to distress the cow with long and futile efforts to extract the calf, too frequently endangering the lives of both. To understand the management of cows at this critical period, a man *must have experience.* The study of writings on the treatment of cows at this time is of little avail, unless the habits of cows themselves are investigated. Some cows invariably have long and painful labors, others calve quickly and easily; and the owner of a herd of cows, by *practical application*, will gain additional information from each case. The cow should be allowed to lick the calf if she is quiet and appears fond of it; as sometimes a cow will destroy her offspring whilst the pains are strong upon her. In an hour or two the calf will be on its legs, and with a little assistance from the cowman it will soon learn to suck, and be out of harm's way. The cow must be milked soon after calving, and her udder be well and frequently fomented with warm water, and rubbed with fresh lard for several days. If it is a heifer's first calf, particular attention should be paid to the udder, or inflammation may ensue, and destroy her for milking purposes. If the cow seems exhausted after calving, a drink of warm oatmeal gruel, with a quart of good ale, can be given her, succeeded by a warm bran mash. Warm oatmeal gruel should be continued for three or four days with some sweet hay.

It is desirable to keep the cows daily cleansed from dirt, without rubbing off the hair. Cows can be cleaned at a trifling expense when they are kept in yards, as they can then lick and clean themselves. Their feet occasionally require paring and trimming, which can be readily done when the cow lies down; or her coarse hoofs can be sawn off, placing one foot at a time on a flat board. Few animals show the effects of ill treatment more than the cow, which from improper usage becomes restless, timid or savage,

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when wanted to be milked; refuses to give her milk; and allows no one to approach her when in the field; whereas the cow which is kindly treated is very quiet and docile, and can be "handled" at any time. Cows do not like fresh hands to milk them, and the same persons should be regularly engaged amongst them, as far as it is practicable.

I do not think that cows are affected by the season, so far as weather is concerned, in holding to the bull. A sudden change from mild or warm weather to extreme cold and wet within 24 hours after the cow has been bulled would, doubtless, have a great tendency to prevent conception, as the blood of the animal would experience a sudden chill, which is opposed to the theory of conception. But these cases are exceptional, and in the event of a whole herd frequently breaking their bulling, I should advise the state of the bull to be investigated, as the fault is more likely to rest with him.

Cows cease to breed at different ages; many fail after producing one, two or three calves, whilst others breed reguglarly to fifteen years and upwards. A reference to the 11th vol. of "Coate's Herd Book" affords strong evidence of the advantage of putting heifers to the bull before they are two years old, (confirming the opinion I have expressed,) such heifers usually standing to their first leap, and afterwards proving regular breeders. As examples—"Lany Jane," vol. xi. page 525, calved October 17, 1845, produced her first live calf in February, 1848, when twenty-eight months old, and had 6 single calves registered to May, 1854: "Rose de Meaux," vol. xi. page 679, calved October 1841, produced her first live calf in February, 1844, when twenty-eight months old, and had ten single calves registered to August, 1854. No breeding can be more satisfactory than this, and the instances are numerous in the volume alluded to.

To those breeders who prefer a cow-house, or who wish

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to see their animals conveniently under one-roof, I would recommend an inspection of Her Majesty cow-house, at the Dairy Farm, Windsor. This splendid building, which is 132 feet long, 38 feet wide, and about 45 feet high, is erected with a span roof, under the centre of which is a raised platform, 6 feet 6 inches wide, paved with flag stones, for the accommodation of visitors to inspect the cows, which are arranged in pairs on either side, each pair having a lair 7 feet deep and 8 feet wide, the building containing 60 cows. Each cow has a separate feeding trough, with water trough for a pair, the supply for which is derived from elevated cisterns. At the foot of the lair is a slate gutter, 12 inches wide and about 3 inches deep, which receives the urine and droppings; beyond which is an asphalte pathway, 6 feet wide, running round the building, with an additional space at the ends. Numerous windows in the side walls afford light in the day time, and during feeding and milching hours at night the cows have the advantage of gas light, several lamps being suspended from the center. Doors are conveniently placed for ingress and egress; and open yards with sheds adjoin, into which the cows can at any time be turned. The ventilation of this building is chiefly in the roof, and is very good. The requisite conveniences for stowing and preparing food for the cows of course appertain; and the possession of such a building, filled with the choicest specimens of Shorthorns from the show yards of our Royal Agricultural Society, would in some measure reconcile me to the plan of keeping them which I have so strongly deprecated.

In passing, the visitor to this "Royal cow-house" will find the homesteads at the Dairy Farm and at Shaw Farm, Windsor, well worth his inspection, as they are substantially but plainly built, and possess many conveniences which are not ordinarily met with. The excellent accommodation for the laborers must not be overlooked.

As evidence of the value of exercise to cows near calv-

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ing, I am informed that from about 1830 to 1840, a Mr. George Lyon flourished in Yorkshire, who purchased great numbers of cows for London dairymen. Mr. Lyon usually selected the largest and finest cows, many of them being very fresh. The cows were driven to London at the rate of nine to twelve miles per day, the greater part of them calved on the road, the calves being sold to wayside farmers, or taken forward in carts, and the cows continuing their journey. Mr. Lyon was wont to say that he never lost a cow from calving after she had had three days' traveling.

Some cows are subject to falling down of the vagina or first passage, the cause and treatment of which is thus described by Skellett: "This is a complaint which, in cases of weakness, both precedes and follows calving; the womb and calf's head pressing upon the passage, make the latter fall down, which it does to a certain extent. Before calving little can be done to remedy it; but when it appears after it, it admits a certain method of cure. When the parts are replaced, which is easily done, in order to retain them in their situation, a stitch or two should be passed through the sides of the shape, by means of a packing needle threaded with common tape. The parts are to be embrocated with a decoction of bark with alum, and everything done to strengthen the general habit of the animal; for, as soon as the cow is in health and vigor, this displacement wears off. Before calving, the appearance of this complaint generally alarms those who have the management of cows, and they conceive that the womb will be entirely protruded; it is only necessary here to keep the animal in a position least favorable for the descent, and to give a stitch in the manner directed, which will prevent the protrusion going further, till the operation of calving commences, when the parts are generally retracted, or go up of themselves."

Without expressing an opinion respecting the treatment

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recommended by Skellett, I quote from his work in the absence of better information. The science and skill of our modern veterinary professors may materially improve on the practitioner of twenty-five years ago.

For bad cases of this kind an inclined platform is necessary, so that the cow's hind quarters shall be raised from nine to twelve inches higher than her fore quarters. The cow should be tied up, and lie on sparred boards well littered, under which should be stones or flints for her water to pass through, with good drainage underneath, as the confinement consequent to this state renders cleanliness very necessary to the cow. The ascent to the platform must be gradual, and the cow can be led out for exercise as circumstances permit. For the satisfaction of those breeders who have cows in this condition, I may say that one of the most valuable breeding cows in England is thus afflicted; that she is constantly kept on a raised platform; safely produced a fine bull calf in the autumn of 1857; is again with calf, and looks healthy and well.

Although I do not advise the frequent use of bulling stocks, they are occasionally required, and are a necessary adjunct to a breeder's premises. A minute description of the stocks would needlessly lengthen this paper, but any one desirous of having them constructed can readily inspect them on the premises of most of our established breeders.

A cattle van will be found of essential service to remove stock in times of difficulty. Such may arise from accidental lameness, the slippery state of the roads, or the distance from a railway station, &c. The van should have a let-down flap at either end, so that the animal may walk in at one end and out at the other, on removing the horse. If a cow heavy with calf has to be "backed" out of the van, she may be much frightened, and endanger the safety of herself and calf.

In the management of a herd of Shorthorns much de-

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pends upon the cowman, who must be an early riser, quick, industrious, good-tempered, and clean in his person and habits. He must also be able to control and direct the young men who are under him, and check the least exhibition of temper or violence towards the stock. The cowman should be accustomed to keep a bulling book, to check against the master or bailiff; and to report accidents or doubtful symptoms to his master without delay. He must be able to bleed cattle, and have the necessary instruments at hand, in case of need; to keep a reserve of drinks for cows, and diarrhœa powders for calves; and watch the progress and the changes of the down-calvers with the greatest vigilance. I need scarcely say that the cowman should reside on the premises; that he should always be at his post; and that he should have a man within call at night, to assist him in taking a calf from a cow, if requisite, as favorable cases frequently need the services of two men. He should also be instructed in the use of the probang, in case a cow is choked; and of the trochar, in case she is blown; as either accident requires a prompt remedy, and the animal may be dead before other assistance can be obtained. A cowman's place is confining and anxious, though not laborious; and a good man deserves a master's encouragement.

We must now speak of bulls, the treatment best adapted to render them healthy and strong, and the condition they should be kept in for stock purposes.

I consider it very important the bull-calf should have an ample supply of new milk twice a day until he is eight months old, and if the calf has plenty of milk he will require little other food. When a month old the calf may have some sweet hay to pull at, which will induce him to ruminate; and when four months old, in addition to hay, a small quantity of linseed-cake and a few slices of turnip may be given daily. Should the supply of milk run short, the linseed-cake can be increased, and a little oatmeal

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given, mixed with hay chaff. The food must all be of the best quality, and the milk pure, if the calf has less of it. Much watery drink and indifferent food have a tendency to weaken the organs of digestion, and to create a big belly, which is very objectionable in bull calves. The young bull should lie loose, in a roomy and airy shed, but well littered, and at the age of four months he should be accustomed to the use of a halter or headstall, be occasionally led round a paddock, at other times tied up for an hour, and every means taken to render him docile and tractable. As the bull increases in strength he should be exercised daily, and treated with the greatest kindness and carefulness. After eight months old the calf may be gradually weaned from milk, by substituting linseed tea; and a peck of sliced turnips or wurzel may be given it daily, with 3 pounds linseed-cake, and a quart of oatmeal mixed with hay chaff. When between ten and twelve months old, the young bull should have a ring put in his nose. I prefer copper rings, which are made of three sizes, and are to be obtained in many parts of Yorkshire at 30s. per dozen. The nostril is usually pierced with a hot iron, or cut with a stamp nose-punch, and the ring riveted. The nostril will require rubbing with fresh lard for several days afterwards, and the bull should not be led by the ring until the wound is completely healed. Bull calves which are not desired for getting stock should be castrated at a month old, when the operation can be safely performed.

A young bull will serve a heifer, and get her with calf, when he is ten months old; but it is better not to work him until he is a year old, when the bull may be moderately used to small heifers, without fear of straining his loins or checking his growth. Bull calves are frequently allowed to run in the fields with a "nurse" cow, and suck her at will, gradually weaning themselves. Cases are known where such calves, at 8 months old, have bulled "nurse" and got her with calf. Care must be taken that

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the first heifers put to the bull are not too wide across the hips, and he should be brought out on an empty stomach, and have a good sight of the heifer before he is suffered to jump her. A fair commencement with a young bull is of much importance, as subsequent trouble is thereby avoided. If a heifer will stand quietly in a yard for the bull to serve her, it is far preferable to putting her into the stocks. One thorough jump is sufficient; and if the heifer passes six weeks without coming into season, it may be presumod the bull has "stopped" her. A bull is often suffered to run with cows in the field, and is driven to and from the homestead with them. There is no better plan of keeping and using a bull than this, and he is far more likely to get the cows with calf, and continue to work, than under any other treatment. A pailful of boiled barley given to the bull once or twice a day, when he comes in with the cows will be found beneficial. If the barley is well boiled, and diluted with a little water, the bull will drink it all. When a bull runs out, it is advisable to strap a board over his eyes, which will prevent him destroying trees or fences, and render him less dangerous to human beings in the event of his turning savage. From my knowledge of the effects of peas and beans as food for young bulls, I strongly object to their use, *except in very limited quantities*, being convinced that many valuable animals are irreparably injured by the immoderate use of such food. A bull in full work should be well, but not extravagantly fed. In the winter, one bushel of swedes, given at twice, 3 or 4 pounds of linseed cake, with hay or cut chaff, daily, will keep a bull in good working order. If a bull is having five or six cows a week, he will neither get lazy nor fat on this food; but if he only has one or two cows a week, he will not require linseed cake. Barley-water is strongly recommended for drink when a bull is being worked hard. A bull must, in fact, be fed according to his work, and his nature and disposition must be

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studied; as one will not serve cows if he is poor, another will not serve if he is fresh, and a third will cease to work if he has not a good and regular supply of cows. I have used a bull which was fed simply on barley-straw and half a bushel of cut swedes daily. On this diet he would serve a cow a day, and stop them; but double his allowance of swedes, and give him three or four pounds of linseed-cake daily, with hay, and he would soon cease to serve. Another bull, apparently short of stamina, would not serve at all on low diet, but stopped his cows when he was allowed four pounds linseed-cake daily, with swedes and hay. It sometimes happens that a bull which is ready and active at serving cows, and apparently labors under no defect, will not get the cows with calf. I have never been so unfortunate as to use a bull of this description; but I know gentlemen who have, and who could in no way account for the bull's incompetency. When breeders have only one working bull, it is extremely mortifying to find him so worthless, as a whole herd of cows may lose a season before it is ascertained where the fault lies.

Bulls cease to work at different ages. Many fail to serve at five or six years, whilst others work satisfactorily until ten or twelve years old. Mr. Bates' "Belvidere" served well and got calves until sixteen. Mr. Henry Smith, of Drax Abbey, used "Pilgrim," (4701,) and "Captain Shaftoe," (6833,) until each of them were thirteen years old; and I have Mr. Smith's authority for saying that the late calves by these bulls were quite equal to the early ones. Mr. Richard Booth's "Baron Warlaby," calved in May, 1845, I believe is serving cows at this time; and his "Vanguard," calved in April, 1847, is let out on hire at a great sum, and is working well. I have proved, and my opinion is confirmed by the most experienced breeders, that a bull in full vigor and health will serve six cows a week, and is quite as likely to get all of them with calf as if he only served one cow a week.

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In-and-in breeding is considered detrimental to the working of bulls, and cases are cited of bulls closely bred which have proved slow and bad servers. Yet we must be cautious how we pronounce a strong condemnation against close breeding. We all know how nearly the late Mr. Bates' Shorthorns were allied, the daughter being sometimes bulled by her sire, the dam by her own son, and so on. Yet Mr. Bates' blood, at several subsequent sales, realized enormous prices; and the best strains of his stock are still eagerly contended for.

This herd of Mr. Booth, of Warlaby, is a remarkable example of breeding from the same stock for a long period, the bull Exquisite, (8048,) from the Wiseton Sale in 1846, being the only animal introduced for a "cross" for many years. Yet this celebrated breeder not only exhibited the "best Shorthorn cow," and the "best yearling heifer," at our late Chester Show of the Royal Agricultural Society, but his bulls are so eargerly sought after that he is unable to keep pace with the demand for them. The enormous sums of 100, 200, and 250 guineas per annum are paid him for the hire of a bull; his calves are bespoken whilst they are yet sucking; and his income from the letting out of bulls alone (as none are sold) is equal to that of most of our country squires from their broad acres. His Imperial Majesty the Emperor of France, and his Royal Highness the Prince Consort, each patronize this remarkable herd for a bull; and some of his numerous stock have not been seen by Mr. Booth for ten years, having been moved from one herd to another without returning home.

As it is not my object to call attention to any particular herd of Shorthorns further than to eludicate my subject, I refrain from pursuing this inquiry, which is, however, full of interest to breeders of Shorthorns.

As the temper of no animal is more uncertain than that of the bull, he should always be approached with caution, but without fear. The same man should attend to him as

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much as possible; and though the bull should usually lie loose, he should be tied up at certain times, and accustomed to be handled by the master or by strangers, as well as by the attendant. Where it is not convenient for bulls to run out with cows, exercise must be given them in other ways. A strongly-fenced yard adjoining the bull's shed, into which he can be turned during the day, is very essential; besides which, the bull will be all the better if led out for an hour four or five days in a week. A bull constantly chained up, and not allowed exercise or liberty, is as likely to turn savage as a yard dog similarly treated. From the earliest ages our subject has caused anxiety and inquiry to all who were interested in the breeding of cattle; and Job, in his affliction, alludes to the peculiar prosperity of the wicked, inasmuch as "their bull gendereth, and failed not; their cow calveth, and casteth not her calf." We may safely assume that "high feeding," to which so many of the mischances in breeding are attributed, was but little known or practiced in the days of Job, so far as breeding animals were concerned; yet we find the man considered fortunate and prosperous beyond his fellows who possessed a bull which "gendereth and faileth not;" or a cow which "calveth, and casteth not her calf."

I have previously spoken of the value of a good cowman, and of the qualifications he should possess; but an intelligent, vigilant, and watchful *master* is indispensable in the management of a herd of Shorthorns. He must have a quick eye, to detect the shortcomings of his men, or the failings in his stock; and he must frequently inspect *personally* the feeding of calves, milking of cows, management of bulls, the preparation and application of food; and note the effect of different kinds of food on the animals. It is seldom also that a master can go round his premises without seeing wastefulness to be checked, carelessness to be reproved, or temper to be subdued. Violence to bulls

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should be immediately repressed, as they do not soon forget an injury, and will retaliate when opportunity offers.

Few descriptions of stock require greater forethought and care than a breeding herd of Shorthorns. As the writer of this article, I may add that I have devoted much time and thought to the study of these interesting animals, and I am firmly convinced that in this, as in every pursuit where excellence is desired, a man's time and energies must be largely devoted to his business.

In founding a herd of Shorthorns, the young breeder should commence with a choice few, and spare no pains in procuring them. Nor must money be a consideration, as the first outlay will be the least, if the selection is good. The pedigree of the cows must be of the first class, and free from alloy. The animals themselves must be as perfect in form, and good in quality, as can be bought; and they should be known as regular breeders, or from regular breeding tribes. The *best* Shorthorns cannot be purchased, but they can be bred; and any one commencing with five or six superior cows, and using a bull as good as can be found—the blood and quality of which must also be unexceptionable—may, by retaining his heifers, in a few years be the possessor of a splendid herd. "The Breeder's Complete Register of Shorthorns, containing Forms of Entry for Registering the Pedigree and Produce of the Herd," by Mr. Torr, and published by Longman & Co., London, will be found fully to answer the purpose of a private herd book. Our national register, known as "Coates' Herd Book," in 12 vols. 8vo., is published by the proprietor, Mr. Strafford, of Euston-square, London, who receives entries from Shorthorn breeders at certain times, of which he gives notice, for future publications.

In the foregoing observations I have confined my remarks to the feeding and management of breeding stock in an ordinary and economical manner, consistent with fair condition. The feeding and treatment of stock for exhi-

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bition at our best local and national shows is quite a different matter, and demands care and skill which few persons thoroughly possess, and an outlay and disregard of expenses which alarms prudent men. When expense is not a consideration, other requisites are so essential and imperative, that although the competitors are numerous, the winners of prizes are generally a select few, verifying the words of an ancient motto, that—

"Many go out for wool, and come home shorn."

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ESSAY

ON

DEVONSHIRE CATTLE,

BY T. S. BALLARD,

Of Niles, Michigan.

Could we determine the origin of our races of domestic cattle, we should doubtless be enabled to deduce from the knowledge some principles which would be of importance to the practical agriculturist. Did the several races, known to us at the present day, originate from the same source—from one perfect race or type, at first; or were there, originally, several distinct races? Which of our improved breeds comes nearest to the original type? How much of our present rules and practices, respecting the breeding of animals, have conduced to their improvement? Can the various qualities required in the production of beefing, milking, and working animals be combined in one variety, or must we breed a distinct variety for each purpose? These and many other inquiries would be of importance to the agriculturist, could they be satisfactorily answered. History, which should instruct us, is silent upon the subject. The few lines preserved by "Moses" serve rather to excite than satisfy our curiosity. The wild cattle at present most resembling the tame are those inhabiting the forests of the northeast of Europe; and the wild race in England, still preserved in their purity at Chillingham Park and in Scotland; but it is probable that these represent a race once domesticated, which have been allowed to change to a state of wildness.

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Upon this continent we have no aboriginal, or truly native race of cattle. Whatever the varieties in form, size, or color, they are all the progeny of the various English and European races which were imported into our country in the early settlement of this continent, by immigrants from different localities and countries. Hence it is not upon this continent that we are to look for the original type of our domestic cattle. The greater proportion of them were from the British Isles, to which we still look for animals with which to improve and perfect those that we now possess; and there, perhaps, we should search for the original type which these represent. If we receive the evidence of the geologist and the naturalist, it would appear that even before the creation of man, Great Britain, in its mild and humid climate, possessed peculiar grass-growing capabilities, and was by nature the parent land of numerous graminiverous animals. So early as the newer pliocene formations, shorthorned cattle of an inferior size, as well as the shaggy Bison and the mighty Urus, left their remains mingled with those of the Mammoth and the Rhinoceros. It is probable that the small shorthorned ox—shorthorned as compared with some other species—whose bones are found in the fresh water formations, called by Professor Owen in his work on "British Fossil Animals," *Bos longifrons*, (long skulled ox,) is the parent of British cattle. Professor Nilson, in his "Extinct and existing Bovine Animals," thus describes this species: "As far as we yet know, it is the smallest of the ox tribe that had laid wild in our portion of the globe; the whole length from the muzzle to the end of the rump bone, he (Prof. Owen) supposes to have been about six feet eight inches; and from the slender make of its bones, it had rather resembled the deer than an ox. The forehead upwards over the eyes is flattened, with an edge going along the frontal seam, which is most prominent upwards, and ends with a rounded indentation backwards. Between

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the eyes is a more or less considerable depression, above which there is often a rising, and beneath which lies an incision for the nasal bones. The horn-cores are small, cylindrical, short, curved only in one direction, forwards; yet sometimes, though seldom, downwards in the plane of the forehead. The skull of this species varies considerably in size, according to its age and sex. The species, however, is always known by a protuberance upon the upper part of the forehead in front and an indentation backwards."

In almost every part of the European continent, and in every district of England, skulls, evidently belonging to cattle, have been found, far exceeding in bulk any now known; the peculiarity of the horns, resembling smaller ones dug up in the mines of Cornwall, preserved in some degree in the wild cattle of Chillingham Park, and not quite lost in the native breeds of Devon, East Sussex, and the Welch mountains and the highlands. The combat of Guy, Earl of Warwick, with the wild cow, the skull of which is still preserved at Warwick castle, will sufficiently prove the comparative large size of some of the wild cattle of that day. We have reason, however, to believe that this referred more to individuals than to the characteristics of the breed generally.

Taking what scraps of history we possess and applying known physiological phenomenon to assist in the inquiry, it will become very evident that the famous "Wild White Cattle of Chillingham" were a purely artificial breed, produced in an early age, and then, during protracted civil wars, allowed to become wild in the extensive forests of princes and nobles. The red of the ears, which they retain, indicates their derivation from an older race of red cattle. Professor Bell, in his work on "British Quadrupeds," says: "It appears that the ears are more liable to retain color in animals which become white by domestication than any other parts. This is the case as we have

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seen with the Guinea pig, and it is no less true of the ox, and some others." Professor Fleming remarks, that he never saw an entirely white ox, but that the ears remained of a different color. And Professor Nilson alludes to the fact, that no strictly wild white oxen are known to naturalists. In "Leges Wallicae of Howell Dda,"—the Welch cows of King Howell the Good, which date from about the middle of the tenth century, we find an account of the payment of a fine or forfeiture to the crown, in which a hundred white cows with red ears were demanded; and the offending party was required, besides, to furnish "Unum taurus auribus rufiss," (one bull with red ears.) And "Speed" tells us that Maud De Breos, in order to appease King John, whom her husband had offended, sent to his queen a present of four hundred cows and a bull, all white with red ears.

In the *Bos longifrons*, we believe, is to be recognized the original type of the most ancient, aboriginal species of the British middle horned races of cattle, indigenous and peculiar to that country. No history or tradition known to us is old enough to tell us when they were first domesticated there. But whether this species of animal is, as supposed, the progenitor of the middle horned races of cattle in Britain or not, the middle-horns have existed there from the remotest ages. When Cæsar, at the head of his legions, invaded and conquered "the Island, he tells us, in his commentaries, that the country was well peopled," and that "they possessed numerous herds of cattle." He adds, "the natives of the interior seldom troubled themselves with the tillage of the ground, but lived on milk and fresh meat, and clothed themselves with skins." So it appears that the roast-beef of old England, and the breeding of cattle there, are no modern inventions.

It has been suggested that the Romans introduced their superior cattle into Britain; but, from an examination of numerous authorities, there appears good reason to believe

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that the natives had better cattle than the south of Europe could boast, before Julius Cæsar was born, which were the progenitors of the present middle horned breeds of Britain.

That peculiar breed or variety of middle horns found in the county of Devon, and particularly in the northern part, is believed to be the truest and purest type of that ancient race now existing. Here, from the earliest records, the pure North Devons have remained the same and unchanged, having altered in no essential respect until within the past seventy or eighty years. The wild deer of the forest have no stronger marks of original descent than the well bred, pure, North Devon animal; and in uniformity of appearance and identity of blood, are scarcely more homogeneous.

The Devonshire men, with all their advantages and with such an excellent ground-work to begin upon, were not the first to stir in any systematic attempt to improve the breeds of cattle; and, for some time, were not the most zealous when they were aroused to exertion. We are mainly indebted to their soil and climate, and to the inherent excellencies of the race, for the beautiful specimens which we possess of this most excellent native breed of the "British Isles." And, happily, all the improvement attempted has been by a careful selection of animals from among themselves. There is no combination of different and discordant natures, races, temperaments, constitutions, and conformations in their composition; making up a sort of patch-work animal, which must be very skillfully guarded, lest, in propogating its kind, the offspring fly off to the line of the meanest blood of which the race is compounded. There is nothing of this with the Devon. The same blood flows in his veins to-day that flowed there ages ago. Improved as they have been and may yet be, notwithstanding some of their ardent admirers pronounce them already

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at the goal of perfection, still they are the same homogeneous race.

In size, the Devons occupy a happy medium between the extremes of the largest and the smallest breeds. And the medium sized animals and breeds will generally be found more perfect in their anatomical organization, more healthy, more vigorous and hardy, more symmetrical in form, possessing greater fineness of bone and freedom from offal, and returning a product of better quality, than very large ones; while the latter will, almost invariably, be found to have less capacity to assimilate their food, to require longer and more luxuriant feeding than the smaller animal, and fails, even then, to return a product of an equal degree of excellence in quality. The largest animals, of whatever race, are an unnatural growth; they have stepped beyond the natural limits of the species; and being of a preternatural size and growth, they are extremely prone to deformity either in carcass, bones, or head; in fact, just as they approach monstrosity in size and development, nature begins to disown them, for their departure from her most salutary laws. Their constitutions become too artificial to endure hardship, or even ordinary changes; rendering them subject to pleurisy, pneumonia, consumption, and other pulmonary diseases, and fevers. And, worst of all, these diseases become hereditary, difficult of control, and hopeless of eradication; neither is the evenness and uniformity of quality in their offspring so great as with smaller animals.

There is, in all animal organizations, a certain proportion of the food consumed, which is necessary to, and which is used for the keeping up of the physical system—supplying the waste which is constantly going on in it. If animals get less food than is necessary for this purpose, they fall away; if they consume more, it is expelled from the system, or assimilated and converted into flesh, fat, bones, milk, &c., which is the increase or compensation

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returned for the care and expense bestowed upon them: hence that animal is best, or pays best, which returns the most for all the food consumed, including that which is lost in keeping up the physical organism as well as that from which the increase is actually manufactured.

It is a fact well established, both theoretically and practically, that animals consume food to keep up the physical system, other things being equal, in proportion to their live weight: so that an ox weighing two thousand pounds will require twice as much fodder, for which no compensation is returned, as will be required by one weighing one thousand pounds. Thus far, there is no actual profit derived from either, but the relative profit is one hundred per cent. in favor of the smaller animal; not because it has returned anything as yet, but because, appropriating equal quantities of food to each, the smaller one has a quantity left equal to that which it has consumed, out of which to manufacture an increase; while the large one has nothing left of its equal proportion, from which it can acquire an increase.

Many experiments have been made for the purpose of determining the relative profit of fattening large and small animals, among which we may cite those of Van Shottfield and Reviere, who made many carefully conducted experiments in separately feeding large and small cattle, for the purpose of determining which were the most profitable fatteners, and always found the small to pay better than the large ones: so much so that they estimate the same quantity of food fed to the small cattle returned from one-third to three-fifths (thirty to sixty per cent.) more profit than when fed to the large cattle. Reviere, more fully to test the result upon an indiscriminate lot of cattle, not selected by himself, made a contract with a butcher to feed all his cattle for two and a half months, which he should, from time to time, buy; the cattle to be weighed when received and again when taken away, and the feed-

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ing to be paid for in proportion to the gain in weight. In this case, he found that of the large cattle at least one-third did not gain enough to pay for their fodder, while of the small cattle there was scarcely a thirtieth part but what paid a profit. These cattle were all of the same breed—the common or native one of that part of the country.

In reference to the milk giving capacity of cows, the same rule holds good, and similar results are obtained. Medium sized cows return more milk, and generally that of a better quality, in proportion to the food consumed, than very large ones. It requires a less quantity of food to supply the wants of their bodies, so that all over that quantity goes to increase the quantity and richness of their milk; a weight of food, therefore, with which they could give a fair quantity of milk, would only be sufficient to keep up the bodies of the larger animal.

The Devons, while yielding meat of the best possible quality, furnish us, at the same time, with one of the most economical beef producing animals known. Whatever the breed, there are certain conformations which are indispensable to the thriving ox or cow. If there is one part of the frame the form of which, more than any other, renders the animal valuable, it is the chest. There must be room enough for the heart to beat and the lungs to play, or sufficient blood for the purposes of nutriment and strength will not be circulated; nor will it thoroughly undergo that vital change which is essential to the proper discharge of every function. We look, therefore, first of all, to the wide and deep girth about the heart and lungs. We must have both. We can excuse a slight degree of flatness on the sides, but depth and width we must have, not only about the heart and lungs but over the whole of the ribs: there must be room for the capacious paunch, room for the materials from which the blood is to be provided. This width or thickness of barrel is more advan-

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tageous when behind the elbow and low down between the legs rather than upwards toward the withers; for it diminishes the heaviness of the coarser parts of the animal, which is always a very great consideration. "Cline" maintains that animals with small lungs and livers fatten best; but this opinion does not clash with that above expressed, for it is found that animals with large, broad, deep chests are the best fatteners, and such are generally found to have small but vigorous and healthy lungs and livers. A narrow chest is not indicative of smallness of liver and lungs, although its narrowness may prevent healthy action.

The Devons we find exceedingly well developed in all these most important points. He is light in the withers; the shoulders a little oblique; the breast deep, and the bosom open and wide, particularly so, as contrasted with the fineness of the withers. The legs are wide apart, looking like pillars that have to support a great weight. The points of the shoulders are rarely or never seen; there is no projection of bone as in the horse. These are characteristic and important points. Angular and bony projections are never found in a beast that carries much flesh and fat. The fineness of the withers, the slanting direction of the shoulders, and the broad and open breast, imply both strength and speed, and aptitude to fatten. A narrow chested animal can never be useful either for working or grazing; and we believe it a serious defect even in a milk giving animal. Not only is the breast broad and the chest deep, but the two last ribs are particularly bold and prominent, leaving room for the stomach and other parts concerned in digestion to be fully developed. The hind quarters, or the space from the hip to the point of the rump bone, are long and well filled up;—a point of great importance both for grazing and working. It leaves room for flesh in the most valuable part; and, like the extension and swelling quarters of the blood-

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horse, indicates much power behind, equally connected with strength and speed. The fullness here, and the swelling out of the thigh below, are of much more consequence than the prominence of fat which is so admired on the rump of many prize cattle. The position of the flesh on the carcass is of great importance. Some parts being of finer quality and more valuable than others; the animal, therefore, which carries the greatest quantity of beef on the more valuable parts, is the most valuable animal. But the flesh and fat should be laid on evenly, and not in lumps and patches. The first part which shows fat on the feeding ox is the top of the rump, which, in high-bred animals is a prominent point. Sometimes it protudes too much, the mass of fat laid on there being out of proportion to the lean and therefore worthless to the consumer. This is a part which frequently misleads inexperienced judges as to the fatness of the ox, because fat may be felt on this part when it is very deficient on most of the other points. The loins should be wide, for they are the prime parts. They should seem to extend far along the back; and, although the belly should not hang down, the flanks should be round and deep. The setting on of the tail is high, on a level with the back, rarely much elevated or depressed. This is another important point as connected with the perfection of the hind quarter. The tail should be rather thick at the top than otherwise, indicating a strong spine and a good weigher, and should gradually taper downwards, being covered with fine hair and terminating with a large tuft of long, bright, crisp hair,—the long hair growing from the extremity being of a clear white in color. The head is small, singularly so relatively to the bulk of the animal; and is clear and free from flesh and fat, and lumpy protuberances about the jaws, which are worthless and tend to increase the weight of the least valuable parts of the carcass and give a heavy headed appearance to an animal. The forehead should be flat, in-

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dented, and small; for by the smallness of the forehead the purity of the breed is very much estimated. The cheek should be small, the muzzle fine, and the nose of a clear yellow or orange color. In the bull, the hair should be curled about the head, giving, at the first appearance, an idea of coarseness but which soon wears off; and the neck should be thick and that, sometimes, almost to a fault. But the neck of the ox is thin, having little or no dewlap depending from it, and admirably adapted to the collar or the yoke. It is accounted one of the characteristics of good cattle, that the line of the neck from the horns to the withers should scarcely deviate from that of the back. A droop of the neck from the shoulders to the head, indicates a weakness of constitution. In the Devonshire ox, however, there is a peculiar rising of the forehead, reminding us not a little of the blood-horse, and essentially connected with the quick and free action for which this breed has ever been distinguished; and which causes the head to set upon the neck as if easily carried, giving a light-headed, gay, sprightly appearance to the animal, which is of importance in showing cattle in the market. A fine head, well set upon the neck; a lustrous eye; a gay, sprightly look; an engaging manner, and a free action, are qualities which are very readily and very generally appreciated. The fore-arm is large and powerful, swelling suddenly out above the knee, but is soon lost in the substance of the shoulder, while below the knee the bone is extremely small, and flattened upon the sides. It is only the bone and muscles, there is no useless accumulation of flesh and fat; the leg is deep and the sinews far removed from the bone. It is the leg of the blood-horse, promising both strength and speed, and a tendency to fatten rapidly. The texture of the bone is fine-grained and hard. The joints are compact; the whole bones of the body bearing, as they should, a small proportion, in bulk and weight to that of the whole carcass. A round, thick bone indicates both a slow feeder

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and an inferior quality of flesh. And large joints are thought to indicate bad feeders, and are generally attendant on large, round, coarse bones, which give a clumsy form to the limbs, and are invariably accompanied with dullness of spirit. Thick-boned animals are hard to maintain in condition; they never seem to relish their food, and show carelessness about every thing that concerns them. Although the bones of the leg and whole body should be small and fine, yet not too small,—small enough for the well known accompaniment, a propensity to fatten, —small enough to please the consumer, but not so small as to indicate disease and constitutional weakness, or want of strength and insufficient physical development.

The legs are straight, or at least should be so in good specimens of the breed. If animals are in-kneed, or crooked in the fore legs, it argues a deficiency in blood and a comparative incapacity for work; and not only for work but for grazing too, for they will be hollow behind the withers, a point for which nothing can compensate, because it takes away so much from the place where good flesh and fat should be thickly laid on, decreasing the weight of the valuable parts of the carcass, and diminishing the capacity of the chest and the power of creating arterial and nutricious blood. Neither should the legs be too long—a long, stilt-like leg is awkward, clumsy and cumbersome, serving only to increase the apparent height of the animal without adding to the depth of the body, and usually accompanies a frame unduly proportioned, destitute of symmetry of form, and indicates slow, dull feeding capacity and late maturity. And especially should the leg be short, small, and clean-made below the knee and hock-joints, and closely covered with the skin. The horn of the hoof should be smooth and shining and indicate a healthy growth at its junction with the hair.

The eye of the Devon is very prominent, placid, full, clear and bright; and the animal has a pleasing vivacity

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of countenance, plainly distinguishing it from the heavy aspect of many other breeds—that of the bull showing much of the white. The expression of the eye is an excellent indication of many of the properties of the ox. A dull, heavy, listless eye certainly denotes a slow feeder. A rolling, restless eye is expressive of a restless, capricious disposition, incompatible with quick feeding. A full, clear, prominent eye is a nice indication of good breeding, and is usually accompanied with firmness of bone. A calm, complacent expression of the eye and face is strongly indicative of a sweet and patient disposition, and, of course, of kindly feeding qualities. The cheerful, clear eye denotes good health; while an eye usually clear and bright becoming dull and spiritless indicates the presence of disease.

The skin of the Devon is exceedingly mellow and elastic, and graziers know that there is not a more important point than this. It is of moderate thickness—thin rather than thick—the appearance of thickness arises from the curly hair with which it is covered. Many of these cattle, however, have the hair smooth, in which case it should be fine and glossy, and soft to the feel. A thick, firm skin, covered with thick-set, hard, short hair, always touches hard, and indicates a bad feeder; and a thin, meager, papery skin denotes weakness of constitution and liability to consumption and other pulmonary diseases. A loose, mellow skin, covered with thick, glossy, soft hair, which feels firm, soft and mossy to the touch, is generally associated with purity of blood, symmetry of form, fine bone, good health, and good feeding qualities, and is equally essential in an animal designed for use in the dairy. The color of the skin should be clear, and of an orange tinge. The ears should be thin, erect, (or rather not of a slouching droop,) not too large, and the skin, on the inside, of a clear orange color. The horns of the bull ought to be neither too high nor too low, tapering towards the point, and of a

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yellowish or waxy color. Those of the ox are smaller than those of the bull, longer, and fine even to the base, and of a lighter color.

The Devons vary in color from a dark mahogany to a light bay, almost a yellow. The dark colored ones are thought by some to be more hardy than the lighter colored ones, but they do not fatten so readily. The danger is, when they are too dark, the skin is frequently coarse and the hair wiry, consequently they are not of the best quality. Those of a lighter color, approaching a yellow, are not so healthy and hardy as those of a deeper color, and are said to be liable to diarrhea, and are apt to have a pale colored skin, thinner hide, and are sometimes hard under the hand, and then are unprofitable feeders. The best way is to pursue the medium course and get our cattle neither too dark nor too light, and with a rich orange color of the skin; we then combine hardiness of constitution with excellence of quality. The favorite color is blood red. This is thought to indicate purity of blood, and is generally associated with excellence of quality, thriftiness, hardiness, and quick feeding capacity. The presence of white is disliked, although it is sometimes exhibited about the udder in some of the purest bred Devon cows that have ever been bred by any of the best breeders of the race; but it should be confined to that part alone.

The rich deep red of the Devon race is a favorite color, not only in New England and throughout the United States, but in Old England also. The preference for cattle of this color has always been a prevalent feeling there as it now is here, and instead of diminishing seems to be increasing in intensity. Even breeders of Shorthorns, generally exhibit a marked preference for animals showing a large proportion of well defined, rich, deep red; and some have even recommended one cross with the Devon in the hope that they might thus secure to the Durhams the beauties of form and the rich color of the Devons. It is

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strenuously maintained by some English authorities in reference to the Durhams, that dark red is indicative of hardiness of constitution, richness of milk, and disposition to fatten; that very light, pale red indicates thin milk and little disposition to fatten; while white is considered to indicate weakness and delicacy of constitution. The preference for a rich deep red color is a well defined, well founded preference, devoid of the superstitious reverence anciently attached to this color in the old legends of nearly every part of England, Wales and Scotland, in which the milk of the "red cow" was considered a remedy for every form of disease and a preservation from every evil.

From time immemorial the Devons have been celebrated for their thriftiness, healthiness, ability to endure hardship and occasional scarcity of food, and for the ease and rapidity with which they fattened, as well as the superior excellence of their beef. The feeder and the grazier want animals which, while yielding beef of excellent quality, produce it economically—in other words, that pay well for all they consume. And this is, after all, the only true test of capacity in a beef producing point of view; and hence, that breed or race which shall produce the greatest quantity of beef from a given amount of food, quality as well as quantity considered, are the most profitable fattening animals, especially if also possessing the requisites of healthiness, hardiness, docility, and the ability to go to market without extreme loss. In the Devons, we have an animal possessing all these important requisites. The Farmer's Magazine of half a century ago describes the Devon as healthy, hardy, fattening even in a straw-yard, a sparkling cutter, the lean well intermixed with the fat, and fattening to from fifteen or sixteen, to as high as twenty-three or twenty-four hundred pounds.

Coleman, in his "Agricultural Tour," says of them: "They are beautifully formed, possess excessive fineness of bone and symmetry of form, with sufficient bone and muscle to

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render them perfectly hardy. The flesh is finely marked, or interspersed with attenuate layers of fat and lean, and is of superior quality and flavor. They are highly esteemed in Smithfield market for the excellence of their beef; and their advocates claim that more beef can be made from them with the same amount of feed than from any others." That "one of the most experienced and extensive farmers in Britain says more money can be made from them than from any other breed." And he adds: "I have great confidence in him."

Watson, in his treaties on "Practical Husbandry," says: "The Devons are remarkable for their great docility and exceeding beauty. The form is highly symmetrical; the body round and compactly built, with a wide chest; the skin soft and flexible, marked with a yellow tinge; the hair fine and silky; the carcass is remarkable for yielding the heaviest proportions in the choicest parts, and less in the more coarse. They are kept easily and on coarse fodder, and possess eminently hardy constitutions. They will prosper on thin and scanty pasturage. A few years ago, for the purpose of testing their qualities in feeding, I confined a Devon and a Shorthorn cow in the same stable, subjecting them to the same treatment. The Devon fattened, while the other, although consuming a much greater quantity of food, lost flesh to such an extent that I was constrained to substitute a much heavier feed to maintain her in condition." Milburn, in his description of them, says: "They produce a class of beef, at all periods of their growth, of capital quality."

At the International Cattle Show at Paris, the judges on beef had specimens from each of the competing breeds, roasted so as, practically, to test, by the natural method, the quality of the flesh of each. The result of their gastronomic deliberations was to award the West Highland ox the prize as first in quality, the Devon ox the second,

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the French ox the third, and the English Shorthorn ox the seventh.

Youatt, in describing the Devons, says of their fattening propensities: "Their next quality is their disposition to fatten, and very few rival them here. Some very satisfactory experiments have been made on this point. They do not, indeed, attain the great weight of some breeds; but in a given time they acquired more flesh, and with less consumption of food, and their flesh is beautiful in its kind. It is of that mottled, marbled character so pleasing to the eye and to the taste." And we will add, that flesh of fine quality is actually finer in the fiber than coarser flesh; and when well marbled, has a richness and delicacy of flavor infinitely superior to the coarser meats.

The Duke of Bedford, for the purpose of comparing the feeding qualities of the Devons and the Herefords, purchased in April some oxen of each of these breeds. The Devons were not in so good condition as the Herefords when sent to grass, and cost some twenty-five dollars per head less; but in December, when they were all sold to the butcher, the Devons were superior in fatness and in weight. Coleman tells us that the Shorthorns, in England, are admitted to be great consumers, and to require very high feeding; that an intelligent herdsman accustomed to feeding fattening animals for eighteen years, estimates that the Shorthorns require one-third more food than the Herefords. A trial of the comparative merits of these breeds was instituted by the Duke of Bedford in 1828–9. Three Shorthorns and three Herefords were selected, and fed in the ordinary mode of feeding and without being forced by artificial food of any description. The three Herefords weighed 2,632 pounds, and the three Shorthorns 3,024 pounds. They were turned out to grass from May to November, and then stall-fed until March, when the Shorthorns weighed 4,928 pounds, and the Herefords 4,158 pounds. The Shorthorns gained nearly 400

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pounds the most; but they had consumed 12,755 pounds of turnips, and 1,714 pounds of hay, more than the Herefords. They were all sold in Smithfield market together. The Herefords brought $466 56, and the Shorthorns $471 42, giving only $4 86 to pay for the immense amount of extra food and the excess in weight of the Shorthorns over the Herefords. Against such a breed as the Herefords, the successful competition of the Devon was no small triumph; distancing, at once, as he does both of the *largest* beef-breeds of England.

The same nobleman, in his extensive experiments upon the feeding capacity of the different breeds, selected, in November, six oxen—two Herefords, two Devons, one Sussex and one Leicester, and fed them till December of the following year. The two Herefords weighed 3,949 pounds, and gained 528 pounds; consuming 423 pounds of oilcake, 5,412 pounds of turnips, and 919 pounds of hay. The two Devons weighed 3,231 pounds, and gained 892 pounds; consuming 880 pounds of oilcake, 4,724 pounds of turnips, and 737 pounds of hay. The Sussex weighed 1,848 pounds, and gained 364 pounds; consuming 432 pounds of oilcake, 2,655 pounds of turnips, and 392 pounds of hay. The Leicester weighed 1,750 pounds, and gained 322 pounds; consuming 434 pounds of oilcake, 2,652 pounds of turnips, and 400 pounds of hay. The results of this experiment sum up as follows: The Devons were the lightest in weight of any at the commencement, and consumed much less food than either of the others, and yet gained more pounds in weight than any of them; and when we consider that the Devons are noted above all others for the superior quality of their beef, and for laying on flesh upon the choicest parts, their superiority becomes still more marked and important.

The Devons were next tried with the Glamorgans. Two Devons and one Glamorgan were fed from January till the December following. One of the Devons weighed

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1,491 lbs., and gained 504 lbs.; the other weighed 1,802 lbs., and gained 536 lbs. The Glamorgan weighed 1,540 lbs., and gained 438 lbs.; being beaten by both the lighter and the heavier Devon.

The next experiment was a trial of the grazing and stall-feeding capacity of the Devons against the Galloway Scotts. Twenty of each breed were purchased in October and equal numbers of each subjected to the same treatment. Of these, sixteen of each breed were sold at different times, the last in March of the second year (sixteen months.) The sixteen Scotts cost $594 21, and sold for $1,146 59, having gained by feeding $552 38. The sixteen Devons cost $569 59, and sold for $1,215 00, having gained by feeding $645 41—being $93 03 more than the Scotts had gained. The Devons had been kept, on the average, between six and seven weeks longer than the Scotts; and for this extra time, they were charged eighty-five cents each per week, although the Scotts only gave a profit of fifty-seven cents each per week for seven weeks less than the whole time; but charging the Devons eighty-five cents as stated, gives $91 00 to be deducted from their excess of profit, still leaving them a small amount more profit than the Scotts gave. The remaining four of each breed were stall-fed on turnips and hay, the account standing as follows: The four Devons cost $142 40, and sold for $408 24, gaining by feeding $265 84. The four Scotts cost $148 55, and sold for $364 50, gaining by feeding $215 95—making a profit in favor of the four Devons of $49 89 over the gain on the Scotts. This seemed to establish the superiority of the Devons, both for grazing and stall-feeding; but as the gain by the four stall-fed Devons was half as much as the sixteen Scotts at grazing, it was determined that another trial should be made, in which all should be fed alike, both at grass and in the stall. And again, in October, twenty Devons and twenty Scotts were bought, and were sold at different times, but

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always an equal number of each at each time. The Scotts cost $1,031 05, and sold for $1,818 87, having gained by feeding $787 82. The Devons cost $920 72, and sold for $1,802 53, having gained by feeding $881 82—giving a balance of profit in favor of the Devons over the Scotts of $93 99, in this second trial. The Scotts had previously been tried with the Pembrokes, and had beaten them. Many other experiments were tried, and very few were the breeds of cattle whose relative qualities were not put fairly to the test; and one breed after another was abandoned, until, at last, both the Devons and the Herefords were retained as the two best breeds the Kingdom afforded.

The Devons, although accounted small, are only small as compared with the largest Shorthorns and Herefords. They are of good size, large enough for any purpose, and fully large enough to be profitable fatteners. The idea of smallness, suggested in viewing them, arises from their smoothness, perfect symmetry, and freedom from angular points, which gives to the eye, at first sight, an idea of smallness. They fatten to good weights; under six years old they have come up to a nett dead weight of 1593 lbs. each of beef, sinking hide and tallow; and at three years and seven months, to 1316 lbs., with 160 lbs. of rough tallow; and on grass alone, at five years old, the oxen weigh 30 to 36 hundred pounds per yoke; and both the ox and cow, on cutting up, are found to weigh much beyond the estimates which an eye accustomed only to other breeds would have assigned them.

They have been progressively improved until further advancement would seem nearly impossible. They have reached so high a degree of excellence in their beefing qualities that we may almost class it as absolute perfection. In point of working form they are not deteriorated, and yet have all the earliness of maturity of the Shorthorn or Hereford. Those points in which they were deficient 80 years ago are now fully supplied, and all that is now want-

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ing is a judicious selection of the most perfect of the present breed, in order to preserve it in its state of greatest purity. In the shows of the Smithfield Club, they have been more successful in carrying off prizes than any other breed in proportion to the numbers exhibited. In one instance, there were but thirteen Devons in competition with one hundred and seven Shorthorns and Herefords; yet 3 of the principal prizes were carried off by the Devons,—one taking the "Gold Medal" as the best ox in the yard of any breed.

There are few things more remarkable about the Devonshire cattle than the comparative smallness of the cow. The bull is a great deal smaller than the ox, and the cow is almost as much smaller than the bull. The cows, however, although smaller, possess that roundness and projection of the two or three last ribs, which makes them actually more roomy than a careless inspection of them would indicate. She is particularly distinguished for her full, mild, bright, round, clear eye; the golden colored circle around it, and the same color prevailing on the inside of the ear. The jaws are free from thickness, and the throat from dewlap. The neck fine and thin next the head, but well expanded in its attachment to the shoulders. The points of the back and the hind-quarters are different from those of other breeds, having more roundness and beauty, and being more free from angular points and projections. Her natural capacity for dairying purposes is good; but, in this respect, she might be improved, and that too without detriment to her grazing qualities. No great effort has been made to improve their dairying capacity. Nevertheless, those who have tested them in large numbers, in this sphere, rank them very high; some even claiming their superiority over all others. But laying aside these extreme claims, we may justly concede to them one of the most important requisites possible at the outset, which is, that, originally and naturally, they possess a

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much higher degree of capacity for giving a large quantity of rich milk than was originally possessed by our best dairying breeds; it is recent care, attention, and breeding especially for the dairy, that has given these all the superiority which they can possibly claim.

Several varieties of the middle-horned races have for ages possessed a great degree of excellence in the dairy; and we have not now,—nor have we ever had, a race of cattle which in any single instance are known to have yielded so large a quantity of milk, of so rich a quality, as has been produced from the middle-horns. The greatest yield on record is that of the "Cramp cow" of the Sussex breed,—a kindred race with the Devons, of the same ancient blood, but inferior in general to the Devons in dairying capacity and yield. She gave in four successive years 23,559 quarts of milk which yielded 2,132 lbs. of butter; thus averaging 5,889¾ quarts of milk and 533 pounds of butter per annum. In 1808, her best year, she made 675 pounds of butter.

An impression has prevailed with many, that the Devons were very deficient for dairying purposes; the impression originating, doubtless, from the continually repeated quotation of a part of Youatt's statement, but omitting the very strongly qualifying expressions and examples. The statement is that, "For the dairy the North Devons must be acknowledged to be inferior to several other breeds." Some stop the quotation here; others add: "The milk is good and yields more than an average proportion of cream and butter, but is deficient in quantity." Here there is a very general stopping. Let us finish the statement. "There are those, however, and no mean judges, who deny this and select the North Devons even for the dairy. Mr. Conyers, of Coft Hall, near Epping, a district almost exclusively devoted to the purposes of the dairy, preferred the Devons on account of their large produce, whether in milk, butter, or by suckling. He thought that they held

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to their milk longer than any other sort that he had tried; that they were liable to fewer disorders in their udders; and that being of small size they did not eat more than half what larger cows consumed." If this is what may be realized from them, no more could reasonably be asked of them as a dairy breed; and this is the reputation that they possessed a hundred years ago. But let us continue the statement—he says: "Upon the average, ten cows give me sixty pounds of butter per week in summer and twenty-four in winter." If we allow, in that cold climate, five months winter, and that the cows are dry two months, we then have a yield of 204 pounds of butter per cow, not as the yield of selected specimens, but as the average yield of large dairies of thirty or forty cows; and no other race of cows do now, or ever did, give, upon an average, a better return. He further says: "My thirty North Devon cows have this year, (1788,) upon an average, produced me a profit of $66 58 per cow." This is an amount of profit seldom if ever exceeded by any herd, of any breed, at any time, in any country. Youatt, in describing the Ayershires, which he calls the best dairy breed in the Kingdom, only makes them yield a profit of thirty-four dollars; and some others make it still less than that amount.

The Devons have been extensively used in England for dairying purposes as well as for beefing; some statements concerning which we extract from various reliable sources. The Farmer's Magazine, before quoted, says of the Devon cow: "She is better horned than the ox, very quiet, the playmate of the children, a sure breeder, a good milker, a quick fattener, fair grass fed beef in three months." The dairy, of twenty-one cows, of Mr. Herwood, of Credition, thirty years since, after the season's use, and when within a month of the period of losing their milk, were estimated by Youatt as averaging eight hundred pounds, net weight of the quarters, in beef. In the south of Devonshire, from

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Hartland to Tiverton, the North Devons prevail in their greatest purity. There are more dairies than in the north, and supplied principally by North Devon cows, and a few South Devons. Along the South, on the borders of Cornwall, the South Devon presents itself—a heavier and coarser animal. They are a mixture of the North Devons with a native breed of that part of the country. The South Devons are equally profitable for the grazier, the breeder, and the butcher; but their flesh is not so delicate as that of the North Devons. Some of these cows seem to unite the opposite qualities of, at the same time, fattening and milking. A South Devon has been known to yield two pounds of butter per day; and many are equal to any of the Shorthorns in the quantity of their milk, and far superior to them in its quality. In most parts of Cornwall, the true North Devons are found equal to any their native country will produce. The cows are principally of the Cornish and North Devon breeds, and on the sea coast a few Alderneys. It must, however, be confessed that the majority of the Cornish farmers are partial to the North Devons, and they appear to be better adapted to the soil of this country than any other breed. The practice of letting out cows is not uncommon, and affords a good remuneration to the owner. The price varies with the situation and keep, from twenty-nine to thirty-eight dollars per cow; the calf also being the property of the owner of the beast.

Dorsetshire has long been famed for the excellence of its butter, which for a long time commanded the preference of the London market, and is not now surpassed by that of any other county. The most common dairy cows are of the Devon breed. They are let to dairymen at an annual average of $47 50 per cow. The old Dorset breed have been crossed with the Devon bull with evident advantage. The crosses are hardy, good milkers, and fatten quickly.

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The true old Dorset was a middle-horn, somewhat resembling the South Devon, but not so large.

In Somersetshire, along that part of the county which borders on Devon, and along the coast as far as Bristol and Bath, the purest breed of North Devons is preferred. They are preferred for their aptitude to fatten, their quickness and honesty at work; and they are said to be better milkers than in their native county. They are of a larger size, for the soil is better, and the pasturage is more luxuriant. It is on this account that the oxen bred in some parts, and particularly in the vale of Taunton, although essentially Devons, are preferred to those from the greater part of Devonshire, and even from the neighborhood of Barnstaple and South Moulton. The cows are better for the dairy and for the grazier; and the oxen, if not quite so active as their progenitors, have lost none of their freeness and docility at work, and they have gained materially in strength. In the south and west, the farmers are endeavoring to breed that sort of cattle which will answer for the pail, and the plow, and grazing. This being, however, a dairy county as well as a grazing one, the principal point with them is a good show for milk. They are of the Devon-red; the best suited for all purposes of any cattle in the west of England. Some, however, prefer the Shorthorns, which, in comparing with the North Wilts—an approved dairy breed—Youatt says, will generally make half a hundred more cheese, and at the same time cost less for keep than the Wilts. The true Shorthorns have, in some quarters, gained considerable credit from the excellencies of these Somerset Shorthorns; but they are not Shorthorns at all, having not a particle of Durham, Teeswater, or Shorthorn blood in their veins, either of the old or the improved breed. The old Somersets were a middle-horned race, resembling the Sussex in appearance, and strongly betraying their Devonshire origin. These crossed by the Devon constitute the Somerset

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Shorthorns; so that they must be at least from three-fourths to seven-eighths pure Devon; and hence we consider the Devons justly entitled to wear all the laurels acquired by these Somerset Devonshire Shorthorns in this celebrated dairy district of Britain. In the middle of Somerset, from the Mendip hills on the north to Bridgewater on the west, and the Chard on the South, principally a grazing country, Mr. Billingsley, in his "Survey of Somerset," says: "The business is divided into a summer and winter feed. For summer fattening, the Devons are principally bought in February, either in the northern part of Devon or the lower part of Somerset. They are purchased in tolerable condition, and consume, between February and their turning out, 10 or 12 hundred weight of inferior hay—the skimming of the summer leas. When they are at grass, they are allowed from an acre to an acre and a half per ox, with the addition of one sheep to each ox, and one horse to twenty acres. About Michaelmas they are fat, and pay from eighty-five to ninety-eight cents each per week for their keep. Some give their prime oxen a second summer's grass, and the second year pays better than the first. Some farmers graze heifers in preference to oxen, buying in March and April and selling in October and November, and which are stocked at the rate of a heifer to each acre, with one or two sheep."

In the celebrated Bridgewater cheese-dairy district, the principal dairy cows are of Devonshire origin. In Norfolk, the Devons have many zealous advocates. They are selected for whatever husbandry work is performed by oxen. The Earl of Leicester selects them in large numbers for dairies; and the Earl of Albemarl's straw-yards and sheds rarely contain fewer than sixty of them, for fattening, every winter. Some are bought in to graze, and others are bred there with great success. In Suffolk, the Devons are also found, although not so numerous as in Norfolk. Lord Huntingfield has a fine dairy of North Devon cows,

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and spares no pains or expense to procure the purest and most beautiful bulls to use with his dairy cows.

In Cambridgeshire, on the grazing grounds about the fens, many Devon cattle are prepared for the markets. And in Bedfordshire, and on the grazing grounds of Middlesex, many are kept. In Hampshire, the Longhorns, formerly the prevailing breed, may be said to have perfectly disappeared. They have mostly given place to the Devons and Alderneys. A cross of these has produced some very good cows here, well adapted for the dairy and not unprofitable for the butcher. The Devons are also prevalent in Essex, and have some zealous advocates there, among whom we may name Lord Western, who is partial to these cattle both to feed and for the dairy. His Royal Highness Prince Albert is also a zealous patron and successful breeder of these cattle. They have also found their way to Ireland in considerable numbers. Lord Dunnally has there kept the North Devon cattle for many years, and much approves of them for feeding, for the dairy, and working. The French government have purchased a stock of breeding animals of this breed for a national herd.

The general average, says an authority on the breeds of cattle, of this breed, in butter, is seven to eight pounds a week per cow for the whole season, or so long as they are well fed. If dry three months, and in milk but 40 weeks, this would make the average yield of the breed 280 to 320 pounds of butter per cow per annum. Coleman, in his "Agricultural Tour," giving the result of his observation and experience both in this country and in Europe, says: "The cows invariably yield milk of great richness; and none surpass them for the quantity of butter and cheese which it yields. Mr. Bloomfield, tenant to Lord Leicester, averages four pounds of butter a week (208 pounds per annum) per cow for the whole year, from his whole herd; eight quarts of milk making a pound of butter; and he challenges all England to milk forty cows of any other

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breed against the same number of Devons to be selected from his own dairy. * * * The most productive cow, in butter, which I have found was a North Devon. For several weeks, on grass alone, without extra feed, she produced 21 lbs. of butter per week." If the milk of this cow was as rich as that of the herd given above, her yield of milk would be twenty-four quarts per day, so enormously rich as to yield three pounds of butter; if of the same richness as the milk of the Ayrshire cows at grass, which was analized by Professer Johnston, she must have yielded forty-eight quarts per day; and at the same degree of richness claimed, by six of the best Ayrshire authorities, (three of whom were extensive Ayrshire dairymen,) for that breed, the yield even then must have been thirty-six quarts per day. It is accounted very rich milk that yields an ounce of butter to a quart of milk. Prof. Johnston's "Elements of Agricultural Chemistry" gives a trial of four Ayrshire cows at pasture, in the best of the season; the proportion of butter yielded was a pound to sixteen quarts of milk. The average of the Bloomfield dairy of Devons, given above, for the whole herd, during the entire year, was one hundred per cent. more. Mr. Coleman further says: "The Oaks cow, which made 480 lbs. of butter in a year, nineteen and a quarter pounds in one week, and 16 pounds per week for more than three months; and another cow, within my knowledge, that made 335 pounds a year, were evidently of North Devon blood, though not pretended to be pure."

The average quantity of milk yielded by dairy cows in three counties in England, is stated, in the "Survey of Lancashire," as follows: In Devon, twelve quarts; in Cheshire, eight quarts, and in Lancashire, nine quarts. In the London milk dairies, about which so much has been written, buying the cows newly calved, retaining none after they have ceased to pay for their high keeping, and consuming enormous quantities of food,—the brewer's grains,

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roots, grass, hay, grain, &c.,—the average yield from the large Yorkshire cows is only eight to nine quarts.

The 2d vol. "British Husbandry" gives the trial of cows of different breeds for milk and butter, as follows: The Holderness gave 29 quarts of milk per day, making 2 lbs. 6½ oz. of butter. The Ayrshire gave 20 quarts, making 2 lbs. 2 oz. The Alderney gave 19 quarts, making 1 lb. 9 oz. And the Devon gave 16½ quarts, making 1 lb. 12 oz. of butter. This experiment makes the Devon yield milk twenty-eight per cent. richer than the Alderney, whose chief recommendation is the excessive richness of their milk. Mr. Young, an extensive dairy keeper of Scotland, says Mr. Morton in his "Cyclopedia of Agriculture," obtains from his Ayrshire cows twenty ounces of butter per sixteen quarts of milk, being one and a quarter ounces per quart. Prof. Johnston's "Elements of Agricultural Chemistry" states the proportion of butter obtained from the milk of the Alderney, the Devon, and the Ayrshire, at pasture, as twenty-four ounces each, from sixteen quarts, being one and a half ounces per quart. And also gives a trial of four Ayrshires, at pasture, which resulted in a yield of one ounce per quart, only. The Journal of the "Royal Agricultural Society," states the produce of 20,110 quarts of milk, churned by hand, as 1,109 pounds of butter, being seven-eighths of an ounce of butter per quart of milk.

By the hydrometer, in the hands of an opposer of the Devons and an approver of the Ayrshires, which was graduated for pure milk at one hundred degrees, the milk of the Ayrshire stood at one hundred, while that of the Devon ranged at one hundred and eleven. This excess in weight of the milk of the Devon over that of the Ayrshire, cannot be attributed to the excessive richness of the Ayrshire milk, as that only ranged at pure milk. The richness of the milk of the Devon has been proverbial for ages, and the experiments and trials which we have given, none

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of which were made by the advocates of the Devons, have resulted in finding their milk as rich in every instance as that of the Ayrshire, and in a majority of cases from twenty to fifty per cent. richer; and trials even more favorable might be given. The excess in weight of the milk of the Devon must, therefore, be attributed to the excess of casine, which will give to the Devon an excess of, say, from ten to fifteen per cent. more of cheese from equal quantities of milk than is yielded even by the Ayrshires, which are reputed one of the very best cheese-making breeds. This conclusion also accords with the result of the experiments of Mr. Bronson, in competing for the New York State Fair premiums, who found, by actual trial, that his cows giving the richest milk made twenty per cent. more cheese from equal quantities of milk than was yielded by those giving milk of a poorer quality; and this is what the advocates of the Longhorns have always claimed. They insist, and it is generally conceded, that the Longhorns give the richest milk of any of the larger breeds; and that for the quantity as well as quality of cheese yielded they stand unrivaled among large cattle. Analytical chemistry also confirms our conclusion. The analysis of milk denominated "common milk," gives of water 90.48, casine 3.88, butter 2.88, and of sugar 2.78. Professor Emmons' analysis of the milk of the Jersey cow gives of water 84.73, casine 5.02, butter 8.07, and of sugar 3.05; specific gravity being 1,031.3. The analysis, by Prof. Thompson, of Glasgow, of the milk of the Ayrshire cow, gives of water 87.19, casine 4.16, butter 3.70, and sugar 4.35; specific gravity being 1,029, all other component parts omitted. Now we here find the heaviest milk the richest, notwithstanding its weight, owing to its excess of casine; and we also find that the milk which is the richest in butter is, at the same time, the richest in casine and sugar. The superior quality and richness of the milk of the Devon is not, then, confined to

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the making of butter, but is of equal benefit in the manufacture of cheese, giving us not only the excessive proportional quantity of cheese, but also the immense superiority in quality of that made from milk rich in cream, which is all that gives the Stilton its superiority over the common and skim-milk sorts.

Mr. Tenant, of Scotland, who owns a large herd of Ayrshires, gives the average of his dairy in the best of the season as fifteen quarts of milk daily, twelve of which are required for a pound of butter; and states the average annual yield of butter at 170 lbs. per cow. Dr. Musprat's "Chemistry of Arts and Manufactures" states the annual average yield of butter per cow, in Holstein and Lunenburgh, as 100 pounds, and in England 160 to 180 pounds. The Dutch cattle are, in general, renowned for their dairy qualities, but especially so are the cows of North Holland; and next to these are those of West Friesland and South Holland. Several Dutch authorities estimate their annual yield at 1,200 to 2,400 quarts of milk, making 100 to 175 pounds of butter, or 250 to 400 pounds of cheese per cow. The 2d vol. "British Husbandry" says, a fair annual product from each cow in good condition is 160 to 180 lbs. of butter, or 300 or 400 lbs. of cheese. At these estimates, the Devons, especially if properly cultivated, are fully competent to compete successfully.

In this country, the pure-blood Devon has been kept mainly as a breeding race, and far too little attention has been given to the cultivation of their dairy qualities; yet some experience has been had with them in this sphere, and which fully sustains their claims to the rank of a profitable dairy breed. A young Englishman imported into the western part of New York a bull and two heifers from the herd of Mr. Davy, of North Moulton, (England;) and the cows from this importation, as well as a majority of the cows from the herds of Mr. Patterson, of Baltimore, Mr. Colt, of New Jersey, Messrs. Hurlbut, of Connecticut,

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and Messrs. Washbon, Allen, Garbutt and Beck, of New York, are superior milkers, giving from 12 to 24 quarts of milk through the summer months, and making a corresponding weight of butter. Princes 3d, bred by Col. L. G. Morris, a small, neat, compact little animal, is a great milker.

One of the New York "prize dairies" contained equal numbers of Devon grades and Durham grades, and the owner, in his statement, says that the Devon grades held longer to their milk, and made more pounds of cheese than the Durham grades. The noted "Cream Pot Breed" had a large infusion of Devon blood in their veins, and carried as a general family characteristic the rich, deep-red color, and the orange colored skin of the Devon race. Mr. Bement, of Poughkeepsie, New York, had a Devon cow that dropped her calf in the fall, and between December 10th and January 10th, made fifty pounds of butter; and a two year old heifer, in June, on grass alone, made seven lbs. per week, and in poor pasture at that. Mr. Andrews, of Connecticut, made from one of his Devon cows, 9 pounds 6 ounces of butter per week in January; and from another in ten days in June, during the hottest of the month, on grass alone, made thirteen pounds of butter per week; and for the succeeding ten days, reaching into July, he obtained fifteen pounds per week, 2 lbs. 2¼ oz. per day. Mr. Cowles, from the Devon cow Ruby, which dropped her calf in February, made, in April following, 12 lbs. 8 oz. of butter per week. Mr. Leeds, of Chester county, from the Devon cow Lilly, seven years old, made during the months of June and July fifteen pounds of butter per week, obtaining twenty-four quarts of milk daily. The year before, her yield was twenty-two quarts of milk daily and fourteen pounds of butter weekly. He had, also, a three year old Devon heifer, giving nine and a half quarts of milk daily, and seven pounds of butter weekly. And a two year old heifer, within the knowledge of the writer,

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that dropped her first calf within thirty days of her coming two years old, gave within the succeeding seven months, over three tons weight of milk. Examples might be multiplied to a vast extent, but these are sufficient to show that the Devons are not behind any of the "crack breeds" in natural capacity for dairying purposes. All they require is more care and attention given to the matter of improving them in this respect; and their improvement in this sphere, we believe, may be accomplished conjointly with their improvement in other respects. But this calls up the question of the joint improvement of the two qualities in the same race at the same time.

We are constantly told by one class of writers that the improvement of cattle in both capacities is an impossibility; that the organization which will give the most and best beef is exactly the opposite of that which will yield the most and best milk; that the better and more perfect they become in one sphere, the poorer they will be found in the other; that nature has provided different qualifications, tendencies and secretions, in different races, adapting them to the one or the other of these purposes, and are such that they cannot be conjoined in the same animal. Were these things so, the question would be settled; for there is no appeal from nature's laws. We should then, of course, be obliged to cultivate one race for beef, and a different one for the dairy. But, happily, this state of things rests only in assertion; it has not yet been proven correct, neither is it likely to be.

The believers in the practicability of uniting the beefing and milking qualities in the same breed, contend that the secretions and conformations for each of these purposes, instead of being so very different, are quite similar, and quite compatible with each other; that they are only incapable of vigorous action in both spheres at the same time, because they are the same, and when acting in one direction they are not, of course, acting in the other; but

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that they are capable of being brought into action, alternately, in either; that they are cultivatable qualities, which may be improved or deteriorated in either sphere. But certain facts exist, which ought to be satisfactory evidence that the combination of these qualities can be had in the same breed. They *are* found united, to a good degree, in many breeds; and some races, which originally possessed neither quality in a profitable degree, have been improved in both capacities at the same time, until they are profitable for either purpose, and without their improvement in one sphere appearing to counteract their improvement in the other.

A cross of the Suffolk and the Sussex breeds has been made, retaining to a very fair degree the fattening propensity of the one and the disposition of the other to give a considerable quantity of good milk. The Sussex cows are, almost invariably, in good condition even while giving milk; and no beasts, except their kindred the Devons and the Herefords, will thrive so speedily after being dried. The secretion of milk being stopped, the Sussex cow will fatten even quicker than the ox. The ancient breed of the valley of Glamorgan were good milkers and fattened kindly. The Pembrokeshire cattle mingle to a considerable degree the quality of very fair milkers with a propensity to fatten. The meat is generally good, and beautifully marbled. They will thrive in every situation, and will rapidly outstrip most others when they have plenty of good pasture. The Pembroke cow has been called the poor man's cow; and has the reputation of being one of the best of cottager's cows, while it is equally profitable to the large farmer.

The cattle of the hilly districts of Montgomeryshire are of a blood red, with smoky faces, short legged, very hardy, good milkers, and with a tolerable disposition to fatten. But in the vales of the Severn and Vyrnwy the pasturage is excellent and the breed of cattle much superior. They

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bear considerable resemblance to the Devons, and the cows are not only fair milkers, but the cattle generally show great aptitude to fatten. The Flintshire cattle, also, appear to mingle the qualities of being excellent milkers and quick feeders. The Buchans are deservedly esteemed for their milking qualities, and the beef they produce. Notwithstanding their small size, they will yield from twelve to eighteen quarts of milk per day; and of their profit for fattening we can partially judge, when assured that that small district receives, annually, nearly three-quarters of a million of dollars, for cattle sold to the southern cattle drovers, of this breed alone. The old Arran breed formerly yielded very little milk, although what they did give was good; and in the property of fattening they were inferior and used to be scarcely saleable to the southern cattle drovers at any price. They have been improved, and the breed has essentially changed. Now they are gentle tempered and kindly feeders; and the produce in milk has kept pace with their general improvement, and is excellent in quality. The Aberdeenshires have also been improved. The present breed are heavier in carcass, give more milk, and yet, at the proper age, they fatten as readily as the West Highlanders. Not only on good pasture but on that which is somewhat inferior, the breed has progressively improved, become nearly double its original weight without growing above its keep. The cows have increased from six or eight quarts of milk per day, to from twelve to fourteen quarts.

In few countries is the character of the cattle more uniform than in Fifeshire, and in few parts do they so decidedly unite the best qualities which cattle can possess. They fatten quickly and fill up well at all the choice points; are hardy, fleet, and travel well; are tame, docile, and excellent for work, whether on the plow or the cart; and are far from unprofitable in the dairy. A good cow will yield from twenty to twenty-eight quarts of milk per

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day, and from seven to nine pounds of butter, or ten to twelve of cheese per week, for some months after calving, and are in milk from ten to eleven months of the year.

The Ayrshires are another example of a breed which, originally, possessed neither qualification in a profitable degree, and in which both qualities have been simultaneously improved until they are profitable in both capacities. They were originally black and called black cattle; had large, high-standing horns; hair coarse and standing up; skin thick and adhering to the bones; the bones large and coarse; the bodies lank; and the cows giving but two or at most three Scotch pints of milk per day. Mr. William Aiton, a reliable Scotch author says that he has been an eye witness to the change wrought in the breed, and is unable to account for it otherwise than by better attention to crossing, rearing and feeding; that he has no doubt but a tinge of foreign blood may have come into their veins, but is confident that the principal improvement has been better treatment. It is claimed that this breed is not, at the present day, exceeded by any in the Kingdom as a dairy breed; and their advocates claim that they surpass the Shorthorns for beef purposes; and Youatt says that they unite, perhaps to a greater degree than any other breed, the supposed incompatible proper ties of yielding a great deal of beef and milk. The breeders formerly preferred, and many now prefer, even the bulls according to the feminine aspect of the head and neck; the thinness and lightness of the shoulder, and the thinness of the neck at its junction with the shoulder. But Stephens, in his "Book of the Farm," says: "I am satisfied that the points thus designated by Ayrshire breeders, in all the points contrary to those of a good Shorthorn, are not necessarily promotive of the principal object they have in view—a large yield of milk; for though it cannot be denied that Ayrshire cows are generally good milkers, it is attributable, in my opinion, more to the great length of time that

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they have been devoted to that purpose, and which property has now become inherent in the breed, than to the form which breeders promote;" and Youatt says, it was found by experiment [now] fifty years ago, that the production of Ayrshire animals with a neck still finely shaped toward the head but a great deal thicker toward the shoulder and breast, and with a wider, deeper breast, and thicker through the shoulders, did not interfere at all with the milking qualities of the animals, while it gives greater aptitude to fatten afterward.

Dr. Thompson, of Glasgow, experimented, under the patronage of the government, on the Ayrshires and the native brown breed of Scotland; in which the cattle were weighed, the food and drink weighed, and the urine and manure collected and weighed. He found that the Ayrshire assimilated and retained twelve per cent. more of her food than the other, but an increased quantity of food did not appear, as expected, in an increased flow of milk, but in an increased weight of flesh; while in the better beefing-formed native cow it took the form of an increased flow of milk, and she yielded 3 lbs. 2 oz. more butter than the Ayrshire, while the latter gained 3½ lbs. more flesh than the native. And in conclusion he says: "It is idle to attempt to separate the flesh-forming from the milk-forming functions of dairy stock, as a practical and economical question." Shorthorn breeders also claim that their favorite breed *do* show good returns in both spheres. Some of the herds are almost totally destitute of milking capacity, while in others it appears to be retained, in a good degree, without seeming to interfere with their beef-producing qualities. And with the Devons, we find the Earl of Leicester carrying off the first prizes of the Royal Agricultural Society against such competitors as His Royal Highness Prince Albert, and taking the gold medal of the Smithfield Club for the best ox in the yard of any breed in competition with both Shorthorns and Herefords, while

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his herd from which they sprung are noted as being one of the best dairy herds known.

Among our native cattle, many cows superior for dairy purposes will, when dried of their milk, fatten more rapidly and profitably than a majority of those which are less valuable as milkers. One of our native races—the Red Cattle of New England—are excellent in the dairy, and for beefing purposes they stand at the head of all our native races. If then we may have cattle in which both qualities are combined, it is important that breeders of thorough bred stock should give vastly more attention to the improvement of the milking capacity of their stock than they now do.

In dairying as in the production of beef, those cattle which yield the most of the quantities and qualities required, in proportion to the amount of food consumed, will be found the most profitable. Healthiness, hardiness and docility are qualities that cannot be dispensed with. Another important requisite is that the animals selected shall be able to confer upon their offspring with certainty, by hereditary descent, the superior qualities possessed by their progenitors. To do this the animals must not, themselves, be a mixture of distinct races, except they have been bred *in line* for many generations; and even then, they must be closely watched, and bred with care and skill, or they may "take back" to some undesirable quality possessed by their ancestors. And here we enter a protest against the constantly recurring dictum of articles and writers, asserting that this variety, and that, and the other, will undoubtedly prove beneficial for crossing with cattle intended for dairying purposes. This continued crossing up with every conceivable sort will inevitably destroy all attempts to establish a breed whose characteristics are transmissible by descent; and all such statements, and all attempts to practice after them, should be, at once and forever, discarded. The cattle should, also, possess, as far

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as is possible, uniformity in size, appearance, and capacity, and above all things, a sound, healthy constitution.

The Devon cattle stand unrivalled in their capacity as working animals. They have a quickness of action which very few horses exceed. They have a degree of docility and goodness of temper, and also stoutness and honesty of work, which many teams of horses cannot pretend. Vancouver's "Survey of Devonshire" says, that it is a common days work for four steers to plough two acres a day on fallow ground. Four good Devonshire steers will do as much work in the field or on the road, as any three horses; and in as quick, and often quicker time. They will exert all their strength; and, repeatedly, stand many a dead pull which few horses could be induced or forced to attempt. Youatt says, the opponents of ox-husbandry should visit the valleys of North and South Devon, to see what this animal is capable of performing, and how he performs it. Certainly the oxen move along with an agility that it would scarcely be expected from cattle; and the team may be watched a long time without one harsh word being heard, or the whip applied. The profit derived from the use of oxen in this district arises from the activity to which they are trained. During harvest time, and in catching weather, they are sometimes trotted along with empty wagons at the rate of six miles an hour, a degree of speed which no other ox but the Devon has been able to stand. They are usually taken into work at about two or two and a half years old; and they are worked until they are four, five or six; they are then grazed, or kept on hay, and in ten or twelve months, and without any further trouble they are fat and fit for market. The ox thus worked is not thereby stunted in his growth, or deteriorated in quality; on the contrary, he will attain even a larger size, and fatten more fully, from having been worked. Many of the Cornwall farmers go to Barnstaple or South Moulton and buy up great numbers of one and

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two year old steers, and work them until they are eight or ten years old before turning them for beef.

The bright, intelligent-looking, high-headed, well-matched Devon ox, is the *beau ideal* of bovine excellence for the yoke, and nothing else will compare with him for activity, docility, and endurance of "pluck" in the yoke, either at the pole or on the chain. What the turf-horse, and his ancient progenitor, the Arabian, is among horses, the Devon is among cattle. They will bear transferring to inferior and lighter soils, as well as to colder and more exposed situations, without suffering in the slightest degree; and for beef, no animal on this side of the Atlantic equals it in fineness of grain, delicacy of flavor, and economy of production. Its fineness of bone, and freedom from offal, make it a favorite with the butcher, and the choice of the consumer. In England, it is preferred to any other beef excepting only the Galloway and Highland Scott, and bears, excepting those, the highest price in her markets. The Devons, the Herefords and the Scotts, furnish, almost exclusively, the roast beef of Old England, others being comparatively unsaleable except for salting while these can be obtained. The Devon matures early. At four years old he is fully ripe for the shambles, and is good at any age, and no bullock makes a better proof at the shambles than he; and his maturity is *real* maturity—a real ripeness; some others accumulate more bulk at the same age and are called early maturing, but they lack in real ripeness of the flesh.

In Norfolk (England) they are used single in harness to plow between the turnips and other crops; and two, one at a time, will plow out, or ridge over, five acres a day. After a little practice, they are preferred to horses, as they are easily managed, and turn the ends of the rows without any trouble, and do not injure so much of the crop. The best cattle our own country affords, either for working or beefing purposes, are the "Red Cattle of New

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England"—the American Devon—infinitely the best variety of cattle for all purposes of any of our native varieties, and in whose veins flows mainly, almost exclusively, the blood of the middle-horned races, and principally that of the Devon; and which have been, again and again, from time to time, crossed by Devon blood. These cattle, in color, appearance, action and qualities, approach more nearly to the Devons than to any other of our improved races, and resemble the Devon more than do any other variety of our native cattle. Coleman, than whom there could scarcely be a better or more reliable authority, says, after a personal inspection of both in large numbers, that they resemble the Devons, and in truth are identical with the South Devon.

This variety of cattle, and the Genesee County Red Cattle, also strongly tinctured with Devon blood, furnish the celebrated red oxen which contribute so materially to the display of beef in the New York, Philadelphia and Boston markets, and which the best butchers are anxious to purchase, and willing to pay an extra price for.

Another important quality which the Devons possess is the capacity of resisting deteriorating or degenerating influences, and of thriving and maintaining the characteristics and qualities of their race in an eminent degree, even under the most adverse circumstances of hardship, abuse and mismanagement. An example, in illustration, is found in the usage prevalent many years ago in the eastern part of Devonshire. There, if a calf looked likely to fatten, it was forced along for ten or twelve months, and sold or slaughtered; and if others that had not before shown a disposition to thrive now started, they were forwarded as quick as might be and disposed of; hence, all those that were retained, and by which the stock was kept up, were the very refuse of the farm, and yet the breed did not materially degenerate. Reprehensible as such a practice is, could it have been followed with any other race without

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entailing the most disastrous results; and particularly with any breed compounded from distinct and discordant races? This breed being an original and natural one, and having had a continued and uninterrupted line of descent for many centuries, and finding here a congenial climate, they flourished in spite of neglect and abuse, but still would generously repay the best of treatment.

Some have objected to the apparently delicate frame of the Devon, but they have been found hardy enough, in England, to endure even the changeable "clime of Cornwall," where "the smiles of summer, and the rage of storms" often succeed each other in a few hours. And they have proved equally hardy wherever introduced on the American continent, withstanding with impunity the terrific storms and intense cold of the winters of Canada and the Northern States of the Union, and resisting equally well the burning heats, drouths, and scanty herbage of a Georgia summer; and whether on hills or in valleys, on scanty pasturage or the most luxuriant herbage, thriving so efficiently as always to become a favorite with its keepers.

The district of country where the Devons will prove profitable are very large in extent. They are now kept with profit from the north of the Canadas upon the north to Georgia and Alabama on the south, and from Maine on the east to far beyond the Mississippi, and the Missouri also, upon the west.

Ambrose Stevens, himself an importer and breeder of Shorthorns, says: "In America it has been found that the Devons, while suited to all latitudes, are better fitted for the extreme south and the extreme north than any other breed of cattle. In Georgia and Canada, they are superior to all others either for milk or feeding. In a few years all New England will be occupied with this breed, as the one best suited to its pastures and its climate."

But the improvement of our native cattle must not be

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forgotton; for we believe that the Devons are destined to play an important part in their improvement. Numerous as thoroughbred cattle are, they are but a small part of all that are required; and were they at once discarded, their places could not be supplied by the pure blood—they are not numerous enough. The natives must, then, be retained and improved. Whatever may be the advantages of possessing a herd of pure bred animals, however superior in quality or profit, there are many who are not prepared to adopt the pure bloods of any race for general use; professing to believe that for ordinary purposes the natives are more profitable than any others, when selected with judgment. Yet we find even such men buying grades at higher prices too; and their acts, endorsed by money paid, would seem to tell a very different story.

The native cattle of the country cannot be classed as a distinct breed, as they have no fixed peculiarities which they are capable of transmitting with certainty to their descendants, nor any hereditary qualities peculiar to themselves as a tribe or family. And this is one of the principal objections to them. Many individual animals among them are possessed of valuable, and even superior properties; but these properties are accidental in them, and not transmissible to their offspring with any certainty. Their progeny, after all the care and attention which we may bestow upon them, may turn out "scrubs" instead of becoming valuable for any specific purpose. How often do we meet with disappointment in raising calves from the best milkers of our stock, by finding, at the end of three or four years of labor and expense, that our calf is a worthless cow? Now, no one can afford to keep poor stock, or to raise that which is so uncertain in its results. Doubtless, by a judicious selection of both males and females from among the natives, and afterwards from *their* progeny, and so on, they might be made to combine and retain valuable properties, and to transmit them to their

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offspring with nearly as much certainty as the thoroughbred races. But this course, to insure success, requires excellent judgment, great experience, indefatigable perseverance, no sparing of expense, the patience to wait long years—a life time, for the expected results.

One other method remains—a resort to the thoroughbred races for males, and, gradually, to grade our stock up to the thoroughbred standard. This course we believe will give more rapid improvement, at less cost, and with more certainty, than by other means. The selection of the sire from which to breed is now made with more care than was given to the subject in the earlier days of our cattle history; yet, even now, it is more a matter of accident instead of calculation and design than is consistent with rapid or permanent improvement. Lay all fancy aside. Make the first and only object with the farmer to be the greatest money-return for his labor and his produce, and "Blood" will be found to have a cash value, which will, sooner or later, be appreciated. If an animal will bring, at the same age, from the worker of oxen, the dairyman, or the butcher, more nett profit on the same or a less quantity of food than another, it is obviously for the interest of the farmer to raise the superior animal. And, in general, a calf sired by a pure bred bull, particularly of a race distinguished for fineness of bone, symmetry of form, freedom from offal, early maturity, and superior excellence in the quality of its produce, combined with economy in its production, will bring more at the same age than will one sired by a "scrub." In giving primary importance to the selection of the size, we believe the improver is progressing in the right direction; not that it is unimportant what the characteristics of the female may be, for we deem this a matter of great importance and one which is and has been too much neglected; but we are of those who believe that the properties of the male are more obviously imprinted on the offspring than are those of the female,—

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all other things being equal upon both sides. But to confer upon the offspring any particular set of properties with certainty, they must be superimproved by parents derived from a race which have long possessed those properties inbred upon them through a long line of ancestors, which has not been broken in upon by a cross from any race that did not possess those properties in equal perfection: the moment the line is crossed and the pedigree broken, uncertainty commences.

If these requirements exist upon the part of the sire, the offspring will be likely to follow in the line of the male, and receive the impress of his peculiarities; but if the conditions are wanting on the side of the sire and yet exist upon the part of the dam, the offspring will probably follow in the line of the female and receive the impress of the properties possessed by her and her progenitors; and here, perhaps, we may find an explanation of the ill effects attending efforts to improve native cattle by the use of grade and cross-bred sires. The imperfections that we would be rid of, have long been inbred upon the part of the dam; while the chain of descent on the part of the sire, upon which should come down to the offspring the good qualities of the race, has been broken, and the progeny follow in the line of the female instead of in that of the male parent.

The cross-bred animal, we believe, should be discarded in any attempted improvement of native cattle. They are a compound of distinct races, and having no established properties to communicate, we have no guaranty what the progeny will be. In all cases where it is possible so to do, we should use a high-bred sire—one whose ancestral race has long possessed the properties sought to be conferred upon the progeny; and we may allow, and even seek for, sires that are close, or in and inbred, if they and their ancestors possessed the required properties, as these

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will be thereby, the more permanently inbred upon the sire after which we desire the offspring to follow.

In attempting to improve the form of our stock, care must be used in the selection of the female with reference to her size as compared with that of the male, or our improved natives may be worse in form than their native ancestors. The improver must recollect that the dam should be proportionally larger than the sire, not smaller. Experience has sufficiently demonstrated that where the male is much larger than the female, the offspring will generally be of an imperfect form; but that where the female is proportionally larger than the male, the offspring is generally of an improved form. Many thousands of dollars have been thrown away in unsuccessful attempts to improve the native cattle of the country in violation of this rule, by coupling the smaller, and often ill-formed, female with the largest Durham bulls; and the ill success so generally attending this course demonstrates anew the correctness of the rule. If the improver desires a Durham cross, he should select the largest, well-formed cows to be had, and couple them with a small-framed, compact, fine-finished bull, of the purest pedigree, and which is not disproportioned to the female in size. The Devons are also within the operation of the same rule, notwithstanding the assertion sometimes made that they will invariably improve the form and qualities of their crosses with native cattle, and the many cases seemingly in contravention of the rule. They are nearer the size of the natives, and of course there will be fewer violations of the rule, and consequently more numerous examples of improvement in proportion to numbers from an indiscriminate use of them. They are a small-boned, symmetrically-built race, and the calves, when dropped, are peculiarly small compared with the size to which they subsequently attain. We are, therefore, enabled to use this breed in a vast number of cases where there is considerable disproportion in the size

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without, after all, infringing upon the substance of the rule. But there is a limit beyond which we cannot pass, except the offspring proclaim that "Scalaways" are on the increase. The native females selected should be good handlers, good milkers, and possess good feeding capacity, being the best, in these respects, obtainable. The male, in addition to all the perfections of form and qualities which he ought to combine, should possess a pure, unbroken pedigree; and in selecting him, we should look not only to the beefing qualities which he possesses, but also to the milking capacity of the family from which he springs. In the offspring we *should* find improvement in form, in milking properties, and in feeding capacity. With the females of this cross, the same course should be pursued; always resorting to pure-bred males for sires. In this way may we hope to combine several good qualities in our stock, and to render them fixed and hereditary therein; after which, but not before, we may resort to a selection from among themselves of the best specimens of both sexes for coupling.

The size of animals which will be prosperous in any region appears to depend very much upon the climate as well as the fertility of the country which they inhabit. The animal organization is such that it naturally strives to adapt itself to the circumstances surrounding it. The size of the native race of a country is such as these circumstances prescribe, and cannot be successfully increased without adapting the kind of food and the luxuriance of the pasturage to the altered condition of the animals, and sometimes, also, requiring an artificial change of the natural influences of the climate upon them. Hence the observation of Mr. Cline, in his "Treatise on the Form of Animals," that "the general mistake in crossing has been from an attempt to increase the size of a native race of animals." And Youatt says, "the grand secret of breeding is to suit the breed to the soil and climate. It is because this has

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not been studied, that those breeds which have been invaluable in certain districts have proved altogether profitless and unworthy of culture in others."

The Devons are well calculated to improve the form and quality, and to increase the utility, of our native cattle without increasing the size beyond the proper limits. Their constitutional healthiness and hardiness; their endurance of our northern winters, and of the wide variation and rapid changes of temperature incident to our climate; their fixedness in the transmission of their peculiarities to their offspring; the readiness with which they adapt themselves to the surrounding circumstances; and their great ability to resist deteriorating or degenerating influences, will tend to render our stock better in these important requisites instead of effeminating them, as sires less hardy would do. Their ability to secrete a large quantity of milk, in proportion to the food consumed, which is very rich in buttyraceous and cheesy matter, will give their grades a high rank as profitable dairy animals. Their excellent beefing qualities; elegance of form, fineness of bone, and freedom from offal; their greater proportional weight in the more choice parts, and less in the coarser; the superior quality of their beef, and its economical production, will increase the fattening propensities of our stock, decrease their coarseness of bone and roughness of form, adding both to their beauty and their utility, and thus enable the grazier, the dairyman, and the worker of oxen, profitably, to dispose of their animals for beefing purposes whenever desired. The unrivalled action and ability of the Devons in the yoke; their increased growth and ability to carry flesh from having been worked; their faithfulness and honesty at work; their easy keeping qualities; and their uniformity in every feature, size, shape, color, temperament, and appearance, will give us better and more profitable working oxen than we now possess,

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and which, when their working days are over, can be fed off for beef with profit.

As the many good qualities of the Devons become more and more appreciated, they are increasing in importance both in Europe and in this country. And wherever their blood has crossed the veins of our native cattle, it has produced more important and permanent improvement than by the use of any other race yet tried upon them; and the grades thus obtained have proven very satisfactory to the producers.

T. L. Hart, of Connecticut, says: "Our best cattle are crosses of the common breeds and Devons." E. Matcham, of Ohio, says: "The Devons or their crosses on our best common cows make fine oxen, of good size, active and tractable, of a beautiful red color, which command high prices. The cows, when crossed, are fine for the dairy; and by many are thought to excel for this purpose. They certainly make and carry the most flesh when fed on grass of any cattle raised here; and I think, when fattened for the butcher they will make as good, or a better, return for the expense incurred on them." A. G. Cummings, of New Hampshire, says: "The Devons appropriate our sour grasses to their support. They do well upon meadow hay, and grow finely in our old sour pastures. They are gentle under the yoke, and approved for various other good qualities. Hence they are fast gaining favor with us. They receive flesh and fat with sufficient readiness to prepare them for resisting the severity of our climate. Governor Steel, of this State, has assured me that some of his young cattle of ordinary breed cost him nearly twice as much to keep through the winter as his Devons of the same age. It is evident that these advantages are the consequences of constitutional peculiarities which the Devons possess and which peculiarly adapt them to our soil and climate."

S. A. Collins, of New York, says: "We prefer the Devons to any other breeds; they are hardy and easily kept.

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The oxen are quick, active, and docile; and the cows are excellent milkers, averaging two pounds of butter a day each, with good feed." Mr. Marsh, of New Hampshire, says: "The native cattle, rough and often unsaleable, are fast giving way to improved breeds, among which the Devons are highly esteemed. As working cattle they are unsurpassed, and from their uniformity of color and build are easily matched, and will perform much hard labor without losing flesh. As milkers, they are similar to our native cows, but the quality of their milk is always rich." Mr. Yancey, of Virginia, says: "The Devons, from their quick action in the yoke, are highly esteemed as working cattle. They are also good milkers, and I think best adapted to our climate." Mr. Flint, Secretary of the Massachusetts State Board of Agriculture, in describing the Devons, says: "I have, however, had occasion to examine several [Devon] animals * * * which would have been remarkable as milkers even among good milking stock * * * and had evidently been bred * * * with special reference to the development of the milking qualities." From this we see that a little attention given to the development of the milking qualities of the Devons, even for a short time, results in making them "remarkable as milkers even among good milking stock."

The report of the Genesee County Agricultural Society of New York to the State Society, says: "Our breeders of cattle and horses are giving close attention to the improvement of their stock. * * * The cattle are mostly Devons, with here and there a cross of Durham intermingled with the native breeds; but the preference is generally given to the *cherry reds*, insomuch that the *ring-streaked* and *speckled* lean kine will soon be known no more among us. All the theory in the world, with the aid of all the agricultural papers of the State, cannot convince our people that the Durham cattle will keep as easy, can be made as useful for all work, or stand our winters as well,

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or are as beautiful in symmetry, as the pure blood, elegantly-constructed, sprightly Devon, unsullied with the *grisly-grey* of the heavy, clumsy, coarse-meated, big-jointed, raw-boned Durham." Thus we find the "Genesee common red cattle," so often quoted in the New York market reports, and so highly prized both by the butchers and the consumers, are grade Devons, which usually command from ten to twenty per cent. more, pound for pound, than Durhams and Durham grades, in the same market on the same sale days. Mr. John Periam, of Illinois, says: "I have been engaged for fifteen years in breeding improved stock, (grades,) and have always been satisfied where I used a bull of acknowledged merit. But in this climate, from the experiments that I have made, I am satisfied that, take them for the yoke, for beef and milk, the Devons are so superior to the Durhams that it is idle to make a comparison. In crossing the Devon bull on native stock, you secure increased size, together with eminent style and fineness of bone, and that peculiar marbled meat so much prized by butchers; while in crossing Durhams on natives, you are apt to get coarse-boned, hard-handling cattle. A Durham bull, crossed on Devon cows, I consider nearly worthless, on the principle that it is wrong to use a sire disproportioned to the dam, that is, very much larger. It makes them porous-boned and washy; that is where so many fail in crossing on native stock with Durhams. But the Devon crosses kindly on any kind of native or Durham stock that I have ever tried." But these statements must not be extended—they are occupying too much space.

In preparing the foregoing pages we have made free use of the best authorities on the subject of cattle and their productions; a few of the quotations are not noted except as here acknowledged, but most are specifically referred to the proper source.

The time of the first importation of Devons cannot be given

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with any great assurance of accuracy; the honor of the first importation of the improved animals is claimed as due to Gen. Wm. Eaton, of Brimfield, Mass., who imported some of this breed about 1805; and to his herd the farmers of Hampden and the adjoining counties were much indebted for the improvement of their stock by crossing with animals of this importation and their grades. These animals are supposed to be the foundation of what is known in some localities as the "Eaton breed," noted for a combination of many good qualities. The Devons seem to have been favorites with the farmers of this region from the first; and now, after the lapse of half a century, they are even more in favor than at the first; we are assured by good authority that a majority of the farmers of that region are of the opinion that the Devons are the most profitable cattle, for all purposes, the best adapted to the wants and requirements of the farmers, that have ever been introduced into that State. This race was also introduced into Connecticut at a very early day; and the red color of the cattle introduced there two hundred years ago is still the same. Nearly or quite a century ago, there were traditionary records in New England families, of cows coming forth from their herds, handsome and symmetrical in form, and producing from 27 to 30 quarts of the richest milk; and this was before the improved Durham breed was known, even in England.

Mr. Coleman, late Secretary of the Massachusetts State Board of Agriculture, is very strongly of the opinion that this old New England stock was, mainly, of North Devon origin, as they bear a very strong resemblance to that race, though mixed somewhat perhaps with the Sussex, South Devons and Somersets, and more recently recrossed by pure North Devon blood. The oxen are remarkable for their docility, strength, quickness, and powers of endurance; the cows are good milkers, and both are hardy and fatten readily. We think the world may safely be

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challenged to produce the equals of these oxen in efficiency, uniformity, beauty of appearance, working ability, and fattening capacity, if we except only the Devons and Herefords. Mr. Coleman describes a beautiful view he had a few years ago, of six hundred "Connecticut Red Oxen," three hundred yokes, together at a fair, all remarkable for their uniform red color, high-headed, sprightly appearance, symmetry of form, size, and every mark of strength and hardiness; surely such a race could not have had a mean origin. The Connecticut oxen have been extremely successful in competition at the fairs of the American Institute, during the past thirty years: as a sample of their uniform success; in 1846, all the premiums for fat cattle, the two first premiums on working oxen, and four premiums for the best team of five yokes, went to Connecticut; and the statements filed by the exhibitors all say the cattle are native with a cross of Devon.

Of the New England, purely native cows, one in 1830, at Greenfield, Mass., after reserving 160 quarts of her milk, made one hundred pounds of butter between the 27th of March and the 25th of May; and in fourteen days she made 29 lbs. of butter. One in North Adams, more recently, produced 425 lbs. of butter within the year; 400 lbs. of which was made in nine months. One in Vermont, and bred there, yielded 26 quarts of milk a day; and the milk of twenty-four hours produced 3 lbs. 14 oz. of butter. The average of many of the dairies of these native cows, in some of the counties of Massachusetts, average about 425 lbs. of cheese, and if butter is run upon, about 210 lbs., to each cow, per annum.

An importation of Devons for the purpose of breeding them as a thoroughbred race in this country, was made by Messrs. Patterson and Caton, of Maryland, in 1817, from the herd of the late Earl of Leicester, of Norfolk, England; and into New York, in 1819, by the late Hon. Rufus King, of Jamaica, Long Island, from the same English herd. A

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few years after, about 1824 or 1825, Messrs. Beck & Garbutt, of the western part of New York, obtained some of the animals of the King importation; the Messrs. Hurlbutt, of Connecticut, procured some of the animals of the Patterson herd; Mr. Caton, we believe, introduced them into New Jersey; and in 1835, L. F. Allen, of Grand Island, procured some of the young animals of the King stock, and the breeding of Devons, in America, as a purely thoroughbred race, was established. Their progress was slow at first; their breeders generally being of the class that make little noise in the world, announcing their occupation and progress principally by the silent exhibition of animals rather than by the thousand-tongued voice of the newspaper press, and letting the good qualities of the animals win for themselves an acknowledgment of their merit.

The animals proved satisfactory, as did their crosses with the natives, and they continued to increase in favor in old localities, and acquired a standing in new places; and wherever they have acquired a "foothold," they have, by the exhibition of the many good qualities of their race, maintained their position, and conquered the strongest preconceived prejudices against them. They have progressed until nearly every State of our "commonwealth" has large herds of them; even Nebraska has herds of pure blood Devons grazing her vast prairies. And throughout all this vast extent of country, they have nowhere failed of being excellent and profitable stock, or of improving the quality and usefulness of all sorts and varieties of cattle that they have been crossed with. Some have been exported for breeding purposes to Australia, Van Diemans' Land, South America, and the West India Islands.

It is the opinion of many that the Devons have improved from their introduction and breeding in the climate of America, that they become larger, heavier and finer than in their native climate, but this is probably imaginary.

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Prior to 1850 there had been a very few Devons and Devon grades imported into our State; but we shall offer very little upon the matter of the early history and subsequent progress of the Devons in Michigan, as we are satisfied there are many defects in much that we have collected in reference thereto, and the want of time to investigate precludes its use. Governor Ransom introduced, into Kalamazoo county, some Devon animals, from the herd of E. P. Beck, of Wyoming county, New York, which have produced a marked improvement in the appearance of much of the stock in his vicinity, as has the Devon stock of F. V. Smith and others in that of Coldwater. O. B. Blackmar, of Hillsdale county, introduced and bred Devons and Devon grades in that county, and in reference to the improvement of the native stock of that vicinity, he says, in a letter to the "Commissioner of Patents," in 1849, that a cross of Devon on our common breeds increases their value fifty per cent. Since that date, the number of Devons and Devon breeders have greatly increased; many new importations, of pure blood animals, into the State, have been made; new localities have been opened to them, and they are gradually spreading over the State; and in many places where they were formerly looked upon in scorn and derision, they now stand pre-eminently the favorites over all others.

These cattle have demonstrated by half a century of practical experiment, their adaptation to our range of climate both in summer and in winter. Their endurance of our cold and changeable winters, and scanty pasturage during summer drouths; their easy keeping, uniformity, beauty, and the combination of so many excellent qualities make them specially suited to the wants and requirements of the farmers of Michigan, and must render them the favorite race for general use.

Purity of blood, is a point of the greatest importance in judging a thoroughbred animal. An authority on the sub-

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ject of cattle, declares that, even in selecting lean animals for stall feeding, "the first point to be ascertained in examining an ox is the purity of the breed, whatever that breed may be. * * * The second point is the form of its carcass. And surely he who is breeding a thoroughbred race of animals should be certain of the purity of blood in the animals that he breeds from, for the reason that, in every distinct variety, there are characteristics which are hereditary in the race, and uniformly conferred upon the offspring, in a greater or less degree of perfection; but the moment the hereditary line of descent is broken, the transmission of those peculiarities to the offspring is rendered uncertain; hence the declaration of many excellent breeders, that they would far sooner use an animal which was imperfect in form but pure in blood than to use one perfect in form but imperfect in pedigree. The former would at least maintain the peculiarities of the breed, while the latter would very likely fail to transmit his perfection of form and would interrupt the descent of the hereditary qualities. This point disposed of, the better the form of the carcass the better the animal, is the next rule.

Those who use thoroughbred animals for improving native stock should be equally sure of the purity of blood in the animals they use for sires, or they put at risk all chance of improvement; and they cannot afford to expend their time, labor and money upon uncertainties, when the uncertainties are so easily avoided.

One of the consequences of this strict adherence to purity of breed is the necessity of a record of the pedigrees of thoroughbred animals—a public register, accessible to all who desire to trace or record pedigrees, and so kept as to insure accuracy and the possibility of tracing clearly and fully the breeding of animals upon both sides to imported stock of undoubted purity. We have that record in the "Michigan Stock Register;" and we deem it the

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duty of breeders, for their own interest as well as for the convenience and benefit of the public, to give it their countenance and support, and make it a work of authority, at least within our own State.

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REGISTER

OF

NORTH DEVON CATTLE IN MICHIGAN,

PREPARED FROM THE

STOCK REGISTER OF THE MICHIGAN FARMER,

Including up to Dec. 31, 1859.

The following list of pedigrees, contains the names and descent of the North Devon cattle which have been brought into Michigan or held in it previous to 1860, and the pedigrees of which have been published in a register kept by the editor of the Michigan Farmer. They have now been collected together in the order in which they were first published and numbered, believing that to breeders they may be found more useful for reference, than when scattered over the pages of a periodical. It would have been preferable to have had these pedigrees in alphabetical order, but as this would have caused them to be renumbered, and thus created some confusion, it was deemed best to print them with the original numbers, and to add an index of names which would serve for reference to each one. When the stock register was first started in 1855, it was with the design of aiding to guard the enterprise of those breeders who were expending both time and capital in promoting the improvement of the cattle of the State, and also of putting on record for future reference what was known of the cattle brought into Michigan. At the time the register was commenced, there was no Devon herd-book published in this country, and hence re

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liance had to be placed entirely on the statements of breeders themselves. In preparing the pedigrees for publication in the Transactions, they have been carefully revised, and corrected as far as possible. Still it cannot be deemed that they are perfect. If, however, this record will serve in some degree as a starting point from whence a more complete and perfect State Register of thoroughbred cattle may be made hereafter, and as an aid in keeping up the history of stock in our State, it will have fulfilled the design with which it was begun.

In glancing over the pedigrees of the Devon cattle that have been registered, the reader will be struck with the frequency of certain names, in all the stock. The herds in both Branch county and Berrien county have strong family connections, especially on the female side, into which the Old Devon cow 658 of the herd-book enters as a general ancestor. The Dibble bull also infuses a very strong tinge of blood, into the female side. The imported Duke of Devon, which F. C. Smith brought from Canada, also enters largely into the Coldwater herds, very few individuals of which have entered or registered, and which in a few years more, it is feared, will be in such a mass of inextricable confusion that a reliable pedigree will be difficult to make. This difficulty will be seen in several of the pedigrees recorded here, and which are inserted, not because they are worthy, but that the attention of breeders may be called to the position in which they are placing their stock. The publication of the English and American Devon herd-book is aiding materially to koep order in the ranks of the North Devons. The publication of this work was not commenced, however, until two or three years after the Michigan Stock Register was started, so that the pedigrees when originally printed had no reference to any authentic record. All that are published in this volume, have been compared with the herd-book, and the numbers

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referring to each animal that is recorded in that work have been added so that reference may had to it at any time.

By way of showing in what degree the Devons are related to each other, diagrams of three animals from different herds, have been made and herewith presented. They illustrate also, to some degree, the imperfection of the record. These diagrams serve to test at once the correctness of the pedigree, as the various branches stop short whenever they cannot be traced correctly. Their stoppages are marked with astericks. The figures, except the first numbers, all refer to the numbers attached to the animals as they are entered in the Devon herd-book.

PEDIGREES OF NORTH DEVONS.

1. ZACK TAYLOR.—A bull calved May 10, 1847.

Bred by E. P. Beck, of Wyoming county, N. Y., and purchased from him by O. Blackmar, of Moscow, Hillsdale county, Mich., and afterwards owned and kept by Wm. H. Miller, of Moscow.

Sire.—The Dibble bull, 176, imported in 1839 by Mr. Vernon, of Genesee, from the herd of Mr. Davy, of North Molton, Devonshire, England. This bull was remarkably successful, and seems to have been used to lay the foundation of all the herds in Western New York. He is sometimes known in pedigree by the name of "Lord Western," but he is entered in the Devon Herdbook as "Dibble." He was got by Oxford, 89, who took the first prize at the Royal Agricultural Meeting at Oxford. Oxford was by Forester, 46, a bull bred by Mr. Quartly, of Molland, a very celebrated animal, who was by Symmetry, also bred by Mr. Quartly.

Dam.—Young Beauty 2d; grandam Rosabella; g. g. dam Victoria, 1106; g. g. g. dam Devon, 658, from the importation by Mr. King, of Long Island, and Mr. Patter-

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son, of Baltimore. Victoria was awarded the first premium in her class at the N. Y. State Fair of 1845.

2. FAIRY.—Heifer calved July 21, 1852.

Bred by J. W. Collins, of Sodus, N. Y., and purchased by W. H. Miller, of Moscow, Hillsdale county, Mich.

Sire.—Nero, by Baltimore, 364; by Eclipse, 191, imported Mr. G. Patterson, of Maryland, from the herd of Mr. Bloomfield, of Markam, Norfolk, England.

Dam.—Caroline, 1200, by Albert, bred by S. & S. Hurlbut, Winchester, Connecticut; g. dam, Victoria, 1512, by Exchange, 197; g. g. dam, Fancy 3d; g. g. g. dam, Fancy 2d; g. g. g. g. dam, Old Fancy, 709, bred by Mr. Caton, of Maryland, by Taurus, 320, from one of the heifers presented to Mr. Patterson, by the Earl of Leicester, in 1817.

3. IDA.—Calved in 1853.

Brought into Michigan by E. M. Crippen, of Coldwater. Bred by J. W. Hamlin, of New York.

Sire.—Red Rover, 352, by Rover, 353.

Dam.—Victoria, 1513, by Dibble, 176; g. dam, Sophia, 1053, by Dibble, 176; g. g. dam, Victoria, 1106, by Holkham, 215; g. g. g. dam, Devon, calved in 1828, and descended from the imported stock of Mr. King, of Long Island.

4. YOUNG DUKE OF DEVON.—Calved August, 1852.

Owned by Wm. R. Schuyler, of Marshall, Michigan.

Sire.—Duke of Devon, 405, imported by R. C. Gapper, of Canada West, and brought into Michigan by F. V. Smith, of Coldwater. Duke of Devon was bred by Mr. Davy, of North Molton, England, and received the first premium of the U. S. Agricultural Society, at its exhibition in 1857.

Dam.—Duchess, imported by R. C. Gapper, of C. W., and winner of the first premium at the exhibitions of the New York and Michigan State Agricultural Societies in 1851.

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5. Red Rover 2d.—Calved March 12, 1852.

Bred by J. W. Hamlin, of Aurora, N. Y. Sold to E. M. Crippen, of Coldwater, Michigan, and owned by Reuben Allen, Mason, Cass county, Michigan.

Sire.—Red Rover, 352, by Rover, 353.

Dam.—Rose; grandam, Diana; g. g. dam, Dairy Maid; g. g. g. dam, Victoria, 1106, bred by Mr. Garbutt, Wheatland, N. Y.

6. Number 6.—Calved June 2, 1851.

Bred by E. P. Beck, of Wyoming county, New York. Brought into Michigan by Wm. H. Miller, of Moscow, Hillsdale county, and owned by Gersham Noyes, Adams, Hillsdale county, Michigan.

Sire.—Splendid, 314, by Dibble, 176; out of Lady, 808, bred by Wm. Garbutt, Wheatland, New York, by Holkham, 217.

Dam.—Ellen, by Red Jacket, bred by Mr. Garbutt; grandam out of Devon, 658, bred from the King stock of Long Island.

7. Canulla Scott.—Calved in 1848.

Bred by J. W. Hamlin, N. Y. Brought into Michigan by Wm. H. Miller, of Moscow, Hillsdale county.

Sire.—Prince Albert, 530, by Albert, a bull bred from the stock of Mr. Vernon, of Genesee county, N. Y. Prince Albert was awarded the first prize in his class at the State Fair of New York in 1848.

Dam.—Victoria, 1107, by Dibble, 176, out of Sophia, 1053.

Camilla Scott was awarded the 2d premium as a calf at the New York State Fair of 1848, and the 1st premium at the Erie County Agricultural Show in 1854.

8. Nonpareille.

Bred by J. W. Hamlin, of Aurora, N. Y. Owned by W. H. Miller, Moscow, Mich.

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Sire.—General Taylor, by Wallace, by Red Jacket, 289.

Dam.—Young Columbia, bred by E. P. Beck, from stock of the King and Patterson herd.

9. FANNY.

Bred by J. W. Hamlin, West Aurora, Erie county, New York. Brought into Michigan by W. H. Miller, Moscow, Hillsdale county.

Sire.—Splendid, 315, by Dibble, 176.

Dam.—Young Columbia bred by E. P. Beck, from the King and Patterson stock.

10. MARIAH.—Calved May, 1851.

Bred by E. M. Crippen, Coldwater, Michigan.

Sire.—Zach. Taylor, by Dibble, 176. See above No. 1.

Dam.—Josephine; g. dam Lady, 818, by Holkham, 217; g. g. dam, Devon, 658.

11. JOSHUA.—Calved August 10, 1854.

Bred by E. M. Crippen, Coldwater, Michigan.

Sire.—Young Duke of Devon, by imported Duke of Devon. See No. 4, above.

Dam.—Rosa 2d; g. dam, Rosa; g. g. dam, Dairy Maid; g. g. g. dam, Lady, 818, by Holkham, 217.

12. JENNY.—Calved August 14, 1854.

Bred by E. M. Crippen, Coldwater, Michigan.

Sire.—Young Duke of Devon bred by Mr. Hamlin, of New York, out of a heifer from Old Cherry, 581, now the property of Mr. Wainwright, of Rhinebeck, N. Y.

Dam.—Harriet; g. dam Old Cherry, as above, 581; a cow bred by R. C. Gapper, of Toronto, C. W., by Billy, bred by Mr. Davy, England, out of Beauty, from the herd of the same breeder.

13. GENERAL SCOTT.—Calved April 26, 1855.

Bred by Chas. Betts, Burr Oak, Michigan.

Sire.—Young Duke of Devon, No. 4, as above.

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Dam.—Mariah; g. dam Josephine; g. g. dam Lady, 818, by Holkham, 217. (See No. 10, as above.)

14. WALTON.—Calved April 20, 1856.
Bred by Charles Betts, Burr Oak, Michigan.
Sire.—Joshua, No. 11, as above.
Dam.—Jenny, No. 12, as above.

15. MICHIGAN.—Calved May 7, 1856.
Bred by Charles Betts, Burr Oak, Mich.
Sire.—Joshua, No. 11, as above.
Dam.—Mariah, by Zach Taylor, see No. 10, above.

16. LUCY.—Calved March, 1854.
Bred by E. M. Crippen, Coldwater. Owned by Thomas Blackett, Roseville, Mich.
Sire.—Young Duke of Devon, No. 4, as above.
Dam.—Lucy; grandam, Devon; g. g. dam, Old Devon, of the King and Patterson importation.

17. PRINCE OF WALES.—Calved April, 1856.
Owned by Reuben Allen, of Adamsville, Cass county, Michigan.
Sire.—Duke of Devon, imported. See No. 4, above.
Dam.—Rosina; g. dam, Sophia; g. g. dam, Victoria; g. g. g. dam, Devon, of the King and Patterson importation.

18. JESSE.—Calved March 24, 1857.
Owned by Andrew Elliott, Middlebury, Indiana. Bred by Chas. Betts, of Burr Oak.
Sire.—Joshua, see No. 11, as above.
Dam.—Jenny, see No. 12, as above.

19. JACK DOWNING, 459.—Calved May 20, 1853.
Bred by C. M. Ballard, of Sheldon, Wyoming county, N. Y. Owned by Messrs. Ballard, Niles, Mich.
Sire.—Dibble, 176, imported by Mr. Vernon, of Genesee county, N. Y. Sired by Oxford, 89, who was by Forester,

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46, a very noted bull bred by Mr. Quartly, of Molland, England.

Dam.—Julia, 1346, by Splendid, 315, bred by Wm. Garbutt, of Wheatland; g. dam, Ticket, 1079, by Red Jacket, 289, bred by E. P. Beck, of Sheldon, N. Y.; g. g. dam, Victoria, 1106, by Holkham, 215. Holkham was bred by Mr. Patterson, of Maryland. His sire was Taurus, the yearling bull presented to Mr. Patterson by the celebrated Mr. Coke, Earl of Leicester. The dam of Taurus made thirteen pounds of butter per week. g. g. g. dam, Devon, 658, from the stock of Rufus King, imported from the herd of the Earl of Leicester.

20. WYOMING.—Calved June 18, 1857.

Bred by the Messrs. Ballard, of Niles, Michigan.

Sire.—Coke, 160, bred by Col. L. G. Morris, Mount Fordham, New York. Coke was by the celebrated prize bull Major, 287, out of imported Virtue, 469; she was got by Barton, son of the celebrated Hundred Guinea, 56, out of Venus, 459, by Derby, 23, out of Virgin, 468, by Spencer, out of Violet, 467. Major, 237, was bred by R. C. Gapper, Canada West; sire, Billy; dam, Beauty; both imported from the herd of Mr. Davy, of North Molton, Devonshire, England.

Dam.—Mayflower, 1400, by Coke, 160; g. dam, Rosa, 1466, by Dibble, 176; g. g. dam, Beauty, 1172, by a full blood unnamed bull owned by E. P. Beck, of Sheldon, New York; g. g. g. dam, Victoria, 1106, by Holkham, 215; g. g. g. g. dam, Devon, 658, from the King and Patterson stock.

21. MAJOR, (476.)—Calved May 10, 1855.

Bred by C. M. Ballard, of Sheldon, N. Y., and owned by Messrs. Ballard, of Niles, Michigan.

Sire.—Coke, 160. (See No. 20, as above.)

Dam.—Julia, 1346, by Spencer, 314, by Dibble, 176. Julia was one of the heifers shown by E. P. Beck, of Shel-

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don, when he won in competition for the premium offered for the best three cows and three heifers, by the New York State Agricultural Society in 1851. Grandam Ticket, 1079, by Red Jacket, 289, by Brandy, 150; g. g. dam, Victoria, 1106, by Holkham, 215; g. g. g. dam, Devon, 658.

22. VERNON, (579.)--Calved February 8, 1858.

Bred by Messrs. Ballard, Niles, Michigan.

Sire.—Major, 476; see 21, above.

Dam.—Rose, 1473, by Jack Downing, see 19 above; g. dam, Rosewood, 1482, by Dibble, 176; g. g. dam, Premium, 1447, by Splendid, 314; g. g. g. dam, Crescent, 601, by Holkham, 215; g. g. g. g. dam, Devon, 658.

23. JACK DOWNING, JR., (460.)—Calved July 1, 1856.

Bred by C. M. Ballard, of Sheldon, N. Y. Owned by the Messrs. Ballard, Niles, Mich.

Sire.—Jack Downing, see 19, above.

Dam.—Julia, 1346, by Splendid, 314; g. dam, Ticket, 1079, by Red Jacket, 289; g. g. dam, Victoria, 1106, by Holkham, 215; g. g. g. dam, Devon, 658.

24. DAIRY MAID, (1226.)—Calved May, 1854.

Bred by C. M. Ballard, Sheldon, New York. Owned by Messrs. Ballard, Niles, Mich.

Sire.—Splendid, 314, by Dibble, 176.

Dam.—Crescent, 1212, by Splendid; g. dam, Betty, 1183, by Dibble, 176; g. g. dam, Devon, 658.

Dairy Maid was a great milker. Mr. Ballard states, when but two years old she averaged sixteen quarts per day from June till November.

25. ROSE, (1473.)—Calved May 5, 1855.

Bred by C. M. Ballard, Sheldon, N. Y., and owned by Messrs. Ballard, Niles, Mich.

Sire.—Jack Downing, see No. 19, above.

Dam.—Rosewood, 1482, by Dibble, 176; g. dam, Pre-

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mium, 1447, by Splendid, 314; g. g. g. dam, Crescent, 601, by Holkham, 215; g. g. g. g. dam, Devon, 658.

26. MAYFLOWER, (1400.)—Calved May, 1855.

Bred by E. P. Beck, of Sheldon, New York. Owned by Messrs. Ballard, of Niles, Mich.

Sire.—Coke, 160, (see No. 20, above.)

Dam.—Rosa, 1466, by Dibble, 176; g. dam, Beauty, 1172, by an unnamed bull owned by E. P. Beck, of Sheldon, N. Y.; g. g. dam, Victoria, 1106, by Holkham, 215; g. g. g. dam, Devon, 658.

Mayflower, when sold by Mr. Beck, was pronounced by him to be the fullest in all her points as a Devon cow of any animal he had ever bred.

27. JENNY LIND, (1342.)—Calved March 18, 1856.

Bred by C. M. Ballard, Sheldon, N. Y., owned by Messrs. Ballard, of Niles, Michigan.

Sire.—Coke, 160; (see No. 20, above.)

Dam.—Crescent, 1212, by Splendid, 314; g. dam, Betty, 1183, by Dibble, 176; g. g. dam, Devon, 658.

28. CURLY, (1220.)—Heifer, calved, May 7, 1856.

Bred by C. M. Ballard, Sheldon, New York, owned by Messrs. Ballard, of Niles, Michigan.

Sire.—Coke, 160. (See No. 20, above.)

Dam.—Beauty, 1172, by Splendid, 314; g. dam, Silvy, 1041, by Sir Walter, 311; he was by Dibble, 176, out of Victoria, 1106; g. g. dam, Sticky, 1044, by Holkham, 217; g. g. g. dam Devon, 658.

29. KATE, (1349.)—Calved May 30, 1857.

Bred by Messrs. Ballard, Niles, Michigan.

Sire.—Major, 476; (see No. 21, above.)

Dam.—Dairy Maid, 1226, by Splendid, 314; g. dam, Crescent, 1212, by Splendid, 314; g. g. dam, Betty, 1183, by Dibble, 176; g. g. g. dam, Devon. 658.

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30. Red Lady, (1460.)—Calved April 4, 1856.

Bred by C. M. Ballard, Sheldon, New York, owned by Messrs. Ballard, Niles, Michigan.

Sire.—Coke, 160. (See No. 20, above.)

Dam.—Julia, 1346, by Splendid, 314; g. dam, Ticket, 1079, by Red Jacket, 289; g. g. dam, Victoria, 1106, by Holkham, 215; g. g. g. dam, Devon, 658.

31. Orpha.—Calved, April 4, 1858.

Owned by Andrew Elliott, Middlebury, Indiana.

Sire.—General Scott, by young Duke of Devon; (see Nos. 4 and 13, above.)

Dam.—Jenny, (see No. 12, above;) g. dam, Harriet, by Billy, out of Old Cherry.

32. Young Duke of Devon 2d.—Calved March 20, 1856.

Bred by John Allen, Coldwater, Mich. Owned by John Richard, Raisin, Mich.

Sire.—Duke of Devon, 405, imported by R. C. Gapper, of Canada West, and brought into this State by F. V. Smith, of Coldwater. Duke of Devon was bred by Mr. Davy, of North Molton, Devonshire, England, and was calved April, 1849.

Dam.—Duchess, by Duke 2d, a bull bred by Mr. John Allen, Coldwater, out of imported Duchess; g. dam, Sophia 2d, by Red Rover, 352; g. g. dam, Camilla Scott, by Prince Albert, 530; g. g. g. dam, Victoria, 1513, by Dibble, 176; g. g. g. g. dam, Sophia, 1053, by Dibble, 176; g. g. g. g. g. dam, Victoria, 1106, by Holkham, 215; g. g. g. g. g. g. dam, Devon, 658.

33. Berrien, (366.)—Calved May 12, 1858.

Bred by Messrs. Ballard, of Niles, Mich. Owned by Lucias Beach, of Port Huron, Mich.

Sire.—Major, 476, by Coke, 160, (see 21, above.)

Dam.—Mayflower, 1400, by Coke, 160; g. dam, Rosa, 1466, by Dibble, 176; g. g. dam, Beauty, 1172; g. g. g.

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dam, Victoria, 1106, by Holkham, 215; g. g. g. g. dam, Devon, 658.

34. MAJOR.—Calved in 1856.

Bred by C. H. Williams, Coldwater, owned by Wm. R. Schuyler, Marshall, Mich.

Sire.—Duke of Devon, 405, imported by R. C. Gapper, of Toronto, C. W.

Dam.—Daisy, a cow bred by C. H. Williams, of Coldwater; g. dam, Diana, a cow bred by C. H. Williams, of Coldwater; g. g. dam, Dairy Maid, a cow of the herd of C. H. Williams, Coldwater; g. g. g. dam, Victoria, 1513, by Dibble, 176; g. g. g. g. dam, Sophia, 1053, by Dibble, 176; g. g. g. g. g. dam, Victoria, 1106, by Holkham; g. g. g. g. g. g. dam, Devon, 658.

35. BEAUTY.

Owned by Wm. R. Schuyler, Marshall, Michigan; purchased from the herd of E. M. Crippen, Coldwater.

Sire.—Dibble, 176, imported by Mr. Vernon, of Genesee county, New York.

Dam.—Beauty, 502, by Holkham, 217; g. dam, Devon, 658.

36. OSCEOLA.—Bull, calved in 1858.

Bred by Wm. R. Schuyler, Marshall, Michigan.

Sire.—Major; (see No. 34, above.)

Dam.—Beauty, (see No. 36, as above.)

37. EVA.—Calved in 1857.

Bred by J. W. Hamlin, Willink, Erie county, New York; owned by Wm. R. Schuyler, Marshall, Michigan.

Sire.—Chingagook, 158, by Uncas, 324, by Megunticook, 251; bred by Messrs. Wainwright, of the Meadows, Rhinebeck, New York, out of Helena 3d, 776, by Mayboy, 71.

Dam.—Lady Vernon, by Dibble, 176; g. dam Leona; g. g. dam, Young Columbia, from stock of the importations of King & Patterson.

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38. DAMA.—Calved in 1857.

Bred by J. W. Hamlin, of Willink, Erie county, N. Y.; owned by Wm. R. Schuyler, of Marshall, Michigan.

Sire.—Chingagook, 158, by Uncas, 324, of Helena 3d, 776.

Dam.—Lady Radley, by Dibble, 176; g. dam, Leona; g. g. dam Young Columbia; cows bred by E. P. Beck, of Wyoming county, N. Y., from stock bred from herds of Patterson and King.

39. DUKE OF BRANCH.—Calved April, 1857.

Bred by Clark H. Williams, Coldwater. Owned by Calvin Pierce, Disco, Mich.

Sire.—Duke of Devon 2d, by imported Duke of Devon, 405, out of imported Duchess.

Dam.—Rosa, a cow bred by C. H. Williams, of Coldwater; g. dam, Duenna, a cow bred by the same; g. g. dam, Dairy Maid, bred by the same; g. g. g. dam, supposed to be bred from Devon, 658.

40. ELLA.—Calved May, 1855.

Bred by C. H. Williams, of Coldwater, Mich. Owned by Calvin Pierce, Disco, Macomb county, Mich.

Sire.—Duke of Devon 2d, by imported Duke of Devon, out of imported Duchess.

Dam.—Beauty, supposed to be bred from Devon, 658, a cow calved in 1828, that was the property of Mr. Garbutt, of Wheatland, N. Y., and whose descent was from the stock imported by Messrs. Patterson and King.

40. SIR DAVY.—Calved March 15, 1859.

Bred and owned by Andrew Elliott, Middlebury, Ind.

Sire.—General Scott, by young Duke of Devon; (see No. 13, above.)

Dam.—Jenny, by Young Duke of Devon, (see No. 12, as above;) g. dam, Harriet, from Old Cherry, 581.

41. OXFORD.—Calved June 25, 1859.

Bred by J. Ballard & Sons, Niles, Mich.

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Sire.—Jack Downing, 459, (see No. 19, as above.)

Dam.—Mayflower, 1400, by Coke, 160; g. dam, Rosa, 1466, by Dibble, 176; g. g. dam, Beauty, 1172; g. g. g. dam, Victoria, 1106, by Holkham, 215; g. g. g. g. dam, Devon, 658.

42. LINDA, (1378.)—Heifer, calved August 15, 1858.

Bred by J. Ballard & Sons, Niles, Michigan.

Sire.—Jack Downing, 459, by Dibble, 176.

Dam.—Jenny Lind, 1342, by Coke, 160; g. dam, Crescent, 1212, by Splendid, 314, (see No. 27, as above.)

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3. IDA.

- Victoria 1513.
  - Sophia 1053.
    - Victoria 1106.
      - Devon 658, from Patterson Importation.
      - Holkam 217.
        - Heifer of Patterson Importation.
        - Taurus imp.
    - Dibble 176 imp.
  - Dibble 176 imp.
- Red Rover 352.
  - Sappho 2d.
    - Sappho 1.
      - dam by Eclipse 191, imp.
        - dam by Anchises imp.
          - Susan.
            - Nancy, imp. in 1817.
            - Denny, imp.
          - Bolivia.
            - Garrick, imp.
    - Rover 353.
  - Rover 353.
    - by Eclipse 191 imp.
      - by Anchises, imp.
        - by Bolivar.
          - Fanny imp.
          - Denny imp.

26. MAYFLOWER.

- Rosa.
  - Beauty.
    - Victoria 1106.
      - Devon 658.
      - Holkham 217. *
        - Keeper, Of Patterson Importation.
        - Taurus, Imp.
    - Bull bred by E. P. Beck.
      - *
  - Dibble, Imp.
- Coke 160.
  - Virtue, imp. by L. G. Morris.
  - Major.
    - Beauty.
    - Billy.
    - Both imported by R. C. Gapper, C. W.

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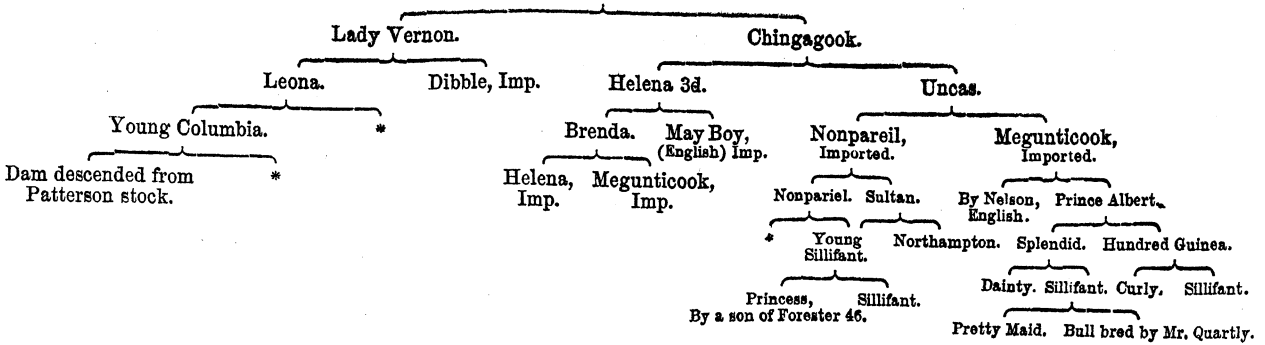
37. EVA.



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AN ESSAY

ON THE

CHEMISTRY AND ECONOMY OF PIG FEEDING,

BY J. B. LAWES,

Of Rothamsted, England.

From the Journal of the Royal Agricultural Society of England.

[The following Essay on Pig Feeding, and its connection with Agricultural Chemistry, was originally published in the Journal of the Royal Agricultural Society of England, in 1853. It has never been reprinted, and is but little known on this side of the Atlantic; and as it contains many results most elaborately detailed, on a subject of which but little is known, these results being deduced from experiments minutely conducted by one of the most experienced and scientific agriculturists of the age, it is believed it will make a valuable addition to the usefulness of this volume of Transactions. It will be noted that the experiments were not the result of a single year's observations, but were carried on for several years. In the same manner this gentleman carried on for a number of years a series of experiments with the various breeds of English Sheep, to test their ability to make a profit to their feeders, and not only were these experiments conducted with the pure bred animals, but also with crosses of some of the various breeds; and when it is added that these experiments were not conducted with single animals, but with fifty head at a time, and that the weights of each animal, of its food, and its cost, were all tabulated separately, and the results gathered from the returns thus shown, some idea may be formed of the capacity and ability of the writer of this Essay, which will be found in the following pages.—SECRETARY.]

In a former number of this Journal we published a paper under the title of "*Sheep Feeding and Manure,*" in which we gave the amount of *Increase in Live weight of Animal,* obtained by the consumption of known quantities of food of various kinds—the chemical composition of such food

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being also given—and we promised to follow up the subject in our next with an account, first, *of the Composition of the Increase in Live weight*, and afterwards, *of that of the Manure obtained.* The main object, indeed of the investigation—as stated both at the commencement and conclusion of that paper—was, to illustrate the general economy of the feeding process, *as one of the great features of farming practice;* that is to say, as producing *Manure* as well as meat, rather than as comparing one food with another in regard to its *feeding* value merely.

Sheep had at that time received the greatest share of our attention; and, owing to the difficulty and labor involved in extending the field of experiment in like detail to other animals, it was intended, if possible, to complete our subject of *Meat* and *Manure-making* by almost exclusive reference to the animals which had given the title to our paper. The further we progressed, however, the more were we convinced, that in spite of the difficulties and necessary postponement of publication, the inquiry must be extended to other animals, to enable us at all satisfactorily to explain the connection between the composition of the food consumed by farm stock generally, and that of the increase, and manure, obtained.

Viewing the feeding process as one of the chief means of obtaining *manure*, it is of the utmost importance that the farmer should be possessed of some principles by which to judge of the productive power of such manure, especially in relation to the composition and value of the food consumed. And, as in this country there is employed a constantly increasing amount both of purchased and saleable food, and of artificial manures, it is essential that the farmer should possess a clearer conception of the principles both of *Feeding* and of *Manuring.*

The importance of such general propositions in agriculture cannot be over estimated; nor will they be undervalued when farmers more clearly recognize and appreciate

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the influence of chemical composition in determining the value of manure, and how far it is a question merely of *economy*, whether the fertility of the soil shall be kept up by manures produced in the yard and the stall, or by those which are purchased in the market. We do not mean to say that it is unimportant in what state, or in what manner, a manure is supplied, but in illustration of the general truth which we would have kept in view, we may here call attention to the fact which we have frequently noticed, namely, that a crop of wheat, of more than the average yield of the neighborhood under the ordinary course of cultivation, has for several successive years been grown in the same field on this farm, by the supply of *pure chemical salts* alone. Let it, then, we repeat, be clearly understood, that, in a certain point of view, it is a matter of indifference whether we purchase food for cattle, or direct manures—and that in some respects therefore the two classes of manures can to a great extent mutually replace each other.

Let this be a settled idea in the farmer's mind, and he will more clearly see the importance of a better understanding of the feeding process, and also of those circumstances which must determine the *economy* of the mutual substitution of artificial manures and those derived from the fattening animal.

In prosecuting our inquiries into the general laws of *Meat and Manure-making*, we have found it necessary to extend our experiments from Sheep, as at first undertaken, to Oxen and Pigs.

Our results, in relation to both these descriptions of animals, as well as the sheep, will eventually be considered in reference to *Manure* as well as *Increase;* but we think it desirable to bring forward the whole of the *feeding* experiments, before entering upon those relating to manure. In pursuance of this plan, a portion of the present paper on *Pig feeding* was actually in type nearly three years

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ago, when that subject was somewhat prominent before the agricultural public; but, owing to other engagements, its completion has necessarily been delayed until the present time.

The necessity of including Pigs in an inquiry relating to the production of meat and manure on the farm, is further seen when we come to consider the character of the food supplied to them. Compared with that of sheep or bullocks, its dry substance consists, weight for weight, of much more highly nutritive vegetable products, and it is consequently generally much more costly to purchase. Thus, whilst the food of *fatting* sheep or oxen, is principally composed of grass, hay, and roots, with a comparatively small proportion of cake or corn, that of the pig, whose digestive apparatus is very differently constituted, is almost exclusively corn, or contains scarcely any indigestible woody-fibre, and abounds more largely in starch, fatty matters, and nitrogenous compounds. We should expect, then, a very different rate of increase in relation to gross weight of dry food consumed in the two cases; whilst in the excrements of the pig we should hope for a manure commensurate with the cost and richness of the food which has been its source.

Setting aside what may be termed the incidental food of the pig, such as wash, potatoes, and other roots, it may be said that his staple *fatting* foods in England are the *leguminous seeds*, such as beans, peas, tares, and lentils, all of which are characterized by containing a high per centage of nitrogenous compounds; and, in still larger quantity, some of the *grains*—especially *barley*—the inferior qualities of which are almost exclusively devoted to his use.

The *grains*, as compared with the leguminous seeds, contain scarcely half the quantity of nitrogenous compounds, upon which so materially depends the quality of the manure; but they abound much more in starch and other *non*-nitrogenous compounds, which are believed to

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provide the chief of the respiratory and fat-forming food of the animal. The quantity of actual *fatty-matter* in the two classes of foods is variable; but it is on an average rather greater in the grains than in the leguminous seeds.

*Pollard** and *bran* are also much used as pig foods. They contain a large amount of woody fibre; but the bran more especially contains a much higher per centage both of *nitrogen* and of *fatty-matter* than the entire grain from which it has been derived.

Of the several articles of food enumerated above, *barley* is undoubtedly most in favor as the fatting food of the pig; but as *nitrogen* is so important a constituent in *manure*, and as barley, as we have said, contains scarcely half so much of this substance as the leguminous seeds, it is evidently a matter of importance to consider, whether the latter might not advantageously be employed more largely than at present—even supposing that *barley* had some slight superiority, so far as the animal alone was concerned.

That the profit of feeding, indeed, is to be sought *within* the limits of the value of the manure, and that it is, therefore, much dependent on the quality of the latter, and, consequently, on the judgment exercised in the selection of the foods, and the management of the animals and of the manure—is a view which seems to be supported at once by the convergent testimony of current experience, and by a consideration of the laws which regulate the price of all articles in general use. Admitting that the prices of all such articles are regulated by the *cost of production*, and that they cannot long either be produced at a loss, or be sold at a price which will yield more than a fair profit upon the capital and labor employed in their production—and, applying this view to the subject before us, we should certainly decide that the selling price of the meat *alone* produced upon the farm must be less than that of the food consumed—and that the profit of the feeding

* A mixture of crushed grain and bran.

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process is to be found in the remaining product, namely, in those parts of the food which are rejected by the animal, and which, under the title of *Manure*, give fresh fertility to the soil, and thus supply a *second product* for the market.

Were it true, indeed, that as a rule the difference between the purchasing and selling price of the fatting animal was equal to, or more, than the cost of his food, it is evident that the profit of the feeding process would cease to depend, as at present supposed, only upon the *united* value of meat and manure—and the latter might then be obtained, in any quantity, *free of expense!* On such a supposition as this, the economical employment of imported and artificial manures would, of course, be at an end; and, unless the rule applied equally to the consumption of the expensive green crops, as to purchased and saleable food, it might even be a question whether the principles of rotation were not entirely fallacious, and its practice ruinous!

Much as we anticipate that careful scientific investigation will conduce to the improvement of our national agriculture, we are far from expecting any important revolution in the main principles involved in the current practice of the best farmers. On the other hand, it is our firm conviction, that it is to a more thorough and generally diffused understanding of those principles—such as shall insure the more complete fulfillment, in the daily practices of the farm, of the ends they are calculated to attain—that we must look for any such improvement. Far be it from us to assert that the mutual relationship between breeding, feeding, manuring, and the growth of green crops and of corn, as already fixed by experience, will always remain as at present. That this relationship will be subject to fluctuation, or even to modifications of a more permanent kind—as the result, as well of the progress of knowledge as of causes of a commercial character—we do not doubt; but we would have it more generally understood, that the

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most legitimate and useful province of agricultural chemistry, at least for the present, is to investigate and explain the recognized practices of the day, and thereby provide such data for the guidance of the intelligent farmer as shall enable him more fully and economically to carry out the principles therein involved.

In the arrangement of our experiments on the feeding of *Pigs*, it was our object to ascertain, not only the amount of increase obtainable from a given quantity of certain approved foods, but to determine the most advantageous proportion of the highly nitrogenous foods to those which are less so; and within what limits this proportion may be varied with a view to the quality of the manure, and at the same time consistently with the profitable progress of the animal. With this view the selection of the foods in the *First Series* of experiments was considered less in reference to their cost than to their composition, it being desired to provide such as contrasted strongly with each other in this respect. It was thought that greater definiteness of result would thus be attained; and that the principle once elicited by this means, the more economical substitute for the foods employed, could afterwards be easily pointed out. Thus:

As the *highly nitrogenous* food—a mixture of equal weights of *Beans* and *Lentils* was employed.

As the comparatively *non*-nitrogenous food—*Indian corn meal.*

As providing a large amount of inert woody fibre—a constituent apparently so essential in the food of the ruminant—*Bran.*

Before entering upon the detail of the experiments it may be remarked, that it was not the object of them to compare one breed of pigs with another; nor are they calculated to determine the several practical points—such as the most profitable age for rapid fatting, &c.; so that, after giving a full account of the circumstances of our own ex-

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periments, we must leave it to the intelligent reader to decide how far the results obtained by us are to be reached, or improved upon, under the perhaps different circumstances of his own practice.

In the selection of animals, it was only sought to get such as resembled one another in character, age, and weight, in the several pens; and, with this view, a competent person was employed to go to the various styes and markets in the neighborhood to purchase animals suited to our object.

It would have been quite impossible to collect, and accurately weigh and sample for analysis, the excrements throughout the whole of so extensive a set of experiments as that we are about to describe; and it was determined, therefore, to devote a few animals separately to the subject of *manure* as well as increase. These were placed upon rafters, which allowed the excrements to pass through upon a sheet of zinc below, and to be collected for analysis as described in our paper on "Sheep-feeding." In the other cases the animals were kept well littered with straw, in pens 7 feet by 8 feet, which were fitted up for the purpose in a spacious barn. The food was, of course, in all cases accurately weighed; and the animals themselves were put into the scales every fourteen days.

Experiments with Pigs.—Series I.

For this Series, which comprised 12 pens of 3 pigs each, 40 animals were purchased, as nearly as possible of the same character, and all supposed to be about 9 or 10 months old. They were bought in three separate lots, of 6, 20, and 14 respectively, between January 22d and February 2d, 1850. On the latter day they were all weighed, marked, and allotted, 3 to each of the 12 pens, in such manner as to get as nearly as possible the same weight in each pen. As will be supposed, this distribution by *weights* alone, did not secure animals of sufficiently equal

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feeding quality in the several pens. On the following day, therefore, they were changed from pen to pen, so as to provide as much as possible a similarity in this respect between pen and pen, and at the same time to retain a near equality in weight also. This being done, the weights stood as follows:

TABLE I.

(*Experiments with Pigs.—Series I.*)

Showing the Weights of the Pigs (in Pounds,) when allotted to the Pens, February 3, 1860.

Nos. of the Pigs.	Pen 1.	Pen 2.	Pen 3.	Pen 4.	Pen 5.	Pen 6.	Pen 7.	Pen 8.	Pen 9.	Pen 10.	Pen 11.	Pen 12.
	lbs.	lbs	lbs.	lbs.	lbs.	lbs	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1	146	146	142	142	140	133	133	132	130	129	131	130
2	121	122	115	123	123	123	124	133	124	128	128	115
3	112	112	113	113	115	122	121	117	119	120	120	129
Total weights of three pigs	379	380	370	378	378	378	378	382	373	377	379	374

The allotment thus completed, the whole were supplied with as much as they chose te eat, of a mixture of one part bean-meal, one part lentil-meal, two parts Indian-corn meal, and four quarts bran, these being the articles fixed upon for the subsequent experiment. Upon this mixture all were kept for 12 days, prior to commencing with the exact experiment, in order that they might become accustomed to their new situation, and reconciled to their new companions: for, in the allotment the various purchases had necessarily been intermixed, in some cases greatly to the disapprobation and discomfort of the individual of those purchases. For a time constant quarrels ensued, and the molested animals frequently jumped from pen to pen, until they fell in with their former associates. Indeed, at first, it was no uncommon occurrence, after they had been left for some time, to find some pens almost deserted and others crowded. The use of the whip was found to be very efficacious in settling these disputes, and at length, all seeming to live amicably together, the exact experiment was commenced on February 14th, twelve days after the first allotment.

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As would be expected, the increase during this preliminary period was far from uniform—those pigs having flourished most which had fallen in for the lion's share, whilst the weaker ones, which had been obliged to sulk in the rear until their more powerful companion had indulged to the full, clearly indicated their misfortunes by their weights. After that time, however, very little irregularity occurred from this cause, vigilant care being taken that each animal should have his share of food; and it soon happened, that the mere approach of the whip was sufficient to awe the pugnacious delinquent into humble retreat, while his weaker neighbor, in his turn, took precedence at the trough. These ill tempers, though at first very troublesome, give way surprisingly by a little perseverance; and the evil of them, in a course of comparative experiments, is, after all, much less than in submitting to a faulty allotment.

The results of the second weighings, when the exact experiment was commenced, namely, on February 14th, are given below:

Table II.

(*Experiments with Pigs.—Series I.*)

Showing the weight (in Pounds) gained during the twelve days of the preliminary period; and also the actual Weights at the commencement of the exact Experiment on February 14, 1850.

Numbers of the Pigs.	PEN 1.		PEN 2.		PEN 3.		PEN 4.		PEN 5.		PEN 6.	
	Gain in 12 Days.	Weight Feb. 14.	Gain in 12 Days	Weight Feb. 14	Gain in 12 Days.	Weight Feb. 14.	Gain in 12 Days.	Weight Feb. 14	Gain in 12 Days.	Weight Feb. 14.	Gain in 12 Days.	Weight Feb. 14.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs	lbs	lbs	lbs.
1.....	30	176	11	157	21	163	31	173	28	168	24	157
2.....	14	135	20	142	16	131	8	131	5	128	21	144
3.....	17	129	11	123	15	128	10	123	20	135	22	144
Totals, ...	61	440	42	422	52	422	49	427	53	431	67	445

Numbers of the Pigs.	PEN 7.		PEN 8.		PEN 9.		PEN 10.		PEN 11.		PEN 12.	
1.....	15	148	13	145	26	156	20	149	6	137	19	149
2.....	2	126	11	144	18	142	10	138	22	150	15	130
3.....	20	141	26	143	11	130	9	129	16	136	21	150
Totals, ...	37	415	50	432	55	428	39	416	44	423	55	429

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A glance at this table, by the side of the former one, will show that the gross weight in each pen was not nearly so uniform at the second weighing as at the first. This irregularity is indeed undesirable; but is perhaps as small as we can hope for in any extensive experiments in which we have to deal with the subtle principle of animal life.

We have already stated that the articles of food selected for the First Series of experiments were—

1. A mixture of equal parts of Bean and Lentil meal, this being taken as the highly nitrogenous food.

2. Indian corn-meal, as containing, compared with the former, only a small quantity of nitrogen, but a comparatively large amount of the non-nitrogenous substances of the starch series, and also more of fatty matter. It is these various non-nitrogenous substances that are supposed more peculiarly to serve for the respiratory process, and for the formation of fat in the animal body.

3. Bran—characterized as containing a considerable amount of inert woody fibre and mineral matter, and comparatively but little of starch, sugar, and the like; it is not, however, deficient either in nitrogenous or fatty matters, being in these respects intermediate between the other two descriptions of food.

From these three standard food-stuffs, twelve dietaries were arranged, as follows:

Pen 1. Bean and Lentil mixture, ad libitum.

Pen 2. 2 lbs. per pig per day of Indian-corn meal; and Bean and Lentil mixture, ad libitum.

Pen 3. 2 lbs. of Bran per pig per day; and Bean and Lentil mixture, ad libitum.

Pen 4. 2 lbs. of Indian-corn meal, and 2 lbs. of Bran per pig per day; and Bean and Lentil mixture, ad libitum.

Pen 5. Indian-corn meal, ad libitum.

Pen 6. 2 lbs. of Bean and Lentil mixture per pig per day; and Indian-corn meal, ad libitum.

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Pen 7. 2 lbs. Bran per pig per day; and Indian-corn meal, ad libitum.

Pen 8. 2 lbs. Bean and Lentil mixture, and 2 lbs. of Bran per pig per day; and Indian-corn meal, ad libitum.

Pen 9. 2 lbs.* of Bean and Lentil mixture per pig per day; and Bran, ad libitum.

Pen 10. 2 lbs.* of Indian-corn meal per pig per day; Bran, ad libitum.

Pen 11. 2 lbs. Bean and Lentil mixture, and 2 lbs. Indian-corn meal per pig per day; Bran, ad libitum.

Pen 12. Bean and Lentil mixture, Indian-corn meal, and Bran, each separately, and ad libitum.

It will be seen, that by the arrangement of allowing a fixed and limited amount of one description of food, and another description to be taken ad libitum, a great variety in the proportions of the different classes of constituents is attained. And it will be readily understood, that—as in every case the animals were permitted to fix for themselves the limit of their consumption according to their natural wants and inclinations—and as the amount and composition of the food consumed was in each case known—the results obtained, would afford us the means of deciding, whether or not this limit of consumption, had been fixed by any common demand for either class of constituents which the food supplied.

But to explain the plan a little further. In the first 4 pens the highly nitrogenous *Bean and Lentil mixture* is given ad libitum; in Pen 1, without any other food; in Pen 2, with a limited quantity of Indian corn meal; in Pen 3, with a limited amount of Bran; and in Pen 4, with a limited quantity both of Indian corn meal and of Bran.

In Pens 5, 6, 7, and 8, the comparatively deficiently nitrogenous, but more highly starchy and fatty food, *Indian corn meal* is given ad libitum; in Pen 5 alone; in Pen 6, with a limited amount of the Bean and Lentil mixture; in

* Increased to 3 lbs. after the first period of 14 days.

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Pen 7, with a limited amount of Bran; and in Pen 8, with a limited amount both of the Bean and Lentil mixture and of Bran.

In Pens 9, 10, 11, and 12, *Bran* is the food given ad libitum, but in no case alone; thus, in Pen 9, it is with a limited quantity of the Bean and Lentil mixture; in Pen 10, with a limited amount of Indian corn meal; in Pen 11, with a limited amout both of the Bean and Lentil mixture and of Indian corn meal; and in Pen 12, with both the Bean and Lentil mixture and the Indian corn meal, but, as before said, neither in this case given in limited quantity, each of the three descriptions of food being put in a separate trough, and the pigs allowed to take of either or all at their discretion.

In all cases the animals were fed three times a day; namely, early in the morning, at noon, and about 5 o'clock. The limited food, if any, was mixed with a small quantity of that which was given ad libitum in the first two feeds of the day. Great care was taken in the management of the supply of food, both that the troughs should generally be cleared out before fresh food was put into them, and that the pigs should always have a liberal supply within their reach; and this, with a little attention and practice, was easily attained.

The pigs themselves were each weighed fortnightly; and the exact experiment extended over four such periods; namely, 8 weeks in all; at the termination of the feeding experiment all were killed; and the weights of the carcass, and of the total offal—and indeed of all the separate parts of it—were taken in each case. The slaughtering results will however not be given in the present paper; but will be reserved until we treat of the general question of the "*Composition of Animal Bodies.*"

In Table III, which follows, are given the particulars of increase in weight of this First Series of Pigs.

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Table III.

(*Experiments with Pigs.—Series I.*)

Showing the *Gain in Weight* (lbs.) upon each of the 12 different Dietaries, of *each Pig*, and of each *Pen of Three Pigs*, during each period of 14 days, and during the entire experimental period of 8 weeks.

	PEN 1. Beans and Lentils (equal parts) Ad Libitum.					PEN 2. 2 lbs. Indian Meal per Pig per day; Beans and Lentils (equal parts) Ad Libitum.				
Numbers of Pigs.	First period, 14 days.	Second period, 14 days.	Third period, 14 days	Fourth period, 14 days.	Total period, 8 weeks	First period, 14 days.	Second period, 14 days.	Third period, 14 days.	Fourth period, 14 days.	Total period, 8 weeks
1.....	27	32	22	22	103	37	35	32	32	136
2.....	26	24	24	20	94	28	33	23	11	95
3.....	24	27	26	29	106	31	26	29	19	105
3 pigs,..	77	83	72	71	303	96	94	84	62	336

	PEN 3. 2 lbs. Bran per Pig per day; Beans and Lentils (equal parts) Ad Libitum.					PEN 4. 2 lbs. Indian Meal, 2 lbs Bran, per Pig per day; Beans and Lentils (equal parts) Ad Libitum.				
1.....	29	15	16	16	76	37	29	26	33	125
2.....	26	16	3	7	52	14	18	19	16	67
3.....	28	29	3	12	72	18	6	13	23	60
3 pigs,..	83	60	22	35	200	69	53	58	72	252

	PEN 5. Indian Meal Ad Libitum.					PEN 6. 2 lbs. Beans and Lentils per Pig per day; Indian Meal Ad Libitum.				
1.....	31	6	40	19	96	29	26	25	26	106
2.....	15	13	13	13	54	32	22	16	16	86
3.....	12	17	19	23	71	40	28	18	30	106
3 pigs,..	58	36	72	55	221	91	76	59	72	298

	PEN 7. 2 lbs. Bran per Pig per Day; Indian Meal Ad Libitum.					PEN 8. 2 lbs. Beans and Lentils, and 2 lbs. Bran per Pig per Day; Indian Meal Ad Libitum.				
1.....	18	33	29	21	101	41	38	29	34	142
2.....	15	18	17	15	65	30	22	18	29	99
3.....	33	37	37	36	143	34	27	20	25	106
3 pigs,..	66	88	83	72	309	105	87	67	88	347

	PEN 9. 2 lbs.* Beans and Lentils (equal parts) per Pig per Day; Bran Ad Libitum.					PEN 10. 2 lbs.* Indian Meal per Pig per Day; Bran Ad Libitum.				
1.....	7	12	12	18	49	8	13	12	10	27
2.....	2	2	0	2	6	10	16	8	10	44
3.....	0	16	17	12	45	3	12	15	13	43
3 pigs,..	9	30	29	32	100	5	41	35	33	114

* Increased to 3 lbs. after the first Period.

	PEN 11. 2 lbs. Beans and Lentils, 2 lbs. Indian Meal, per Pig per Day; Bran Ad Libitum.					PEN 12. Bran, Beans and Lentils, and Indian Meal, each Ad Libitum.				
1	17	14	15	14	60	35	33	29	17	114
2.....	24	11	5	8	48	24	3	1	17	45
3.....	15	14	19	22	70	36	29	12	18	95
3 pigs,..	56	39	39	44	178	95	65	42	52	254

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In this Table we have the particulars of the progress of each pig, and it is therefore deserving of some few remarks; though, the effects of the different foods must be estimated rather by the gross result of the pen of 3 pigs than by the progress of any single animal. Casting the eye over the figures showing the increase in weight of different animals in the same pen, with one and the same pen, with one and the same description of food, it is at once seen, that all have not progressed alike under these supposed similar circumstances. Some of the apparent discrepancies were easily accounted for by some *incidental* circumstance in the character or health of the animal; and in such cases the strictness of the result of the entire pen is, of course, in some degree interfered with. It is therefore necessary not to overlook these particulars in judging of the effects of any particular food.

In the majority of cases, however, we believe that the differences in the progress of the pigs allotted together in the same pen and with the same food, arise from general differences of constitution; and if the irregularity in this respect were equal in every pen, it would certainly be an advantage, for our object is not to show the extraordinary increase of picked animals, but the probable average result obtainable from pigs which have been bred or selected for fattening with ordinary care and judgment. Indeed, as already observed, our chief object in the allotment was to get a variation of quality within each pen with similarity between pen and pen in this respect; and the observations which were made at the end of the experiment, when the pigs were killed, clearly showed, that whilst on the same food, some had increased considerably in frame as well as flesh and fat, others had apparently accumulated fat almost exclusively. These variations of result, then, we attribute chiefly to the different constitutional tendencies of the animals. But, at the same time, though very great care was taken to prevent it, we do not pretend to

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say, that where the limited food was very decidedly of better quality than the remainder, the stronger animals did not sometimes obtain an advantage over the weaker ones. Perhaps in one or two instances, therefore, one pig in a pen may have done better, and another worse, than would have resulted from a due share of the allotted food. Supposing this to have been the case, however, it is still by no means certain that the results indicated by the whole pen are on this ground unfair as regards the effects of the total food supplied to it; for, although one pig may have increased much more than another upon a *supposed* equal diet, the gain of each may, in fact, be only commensurate with the food actually consumed in each case; and thus, with great variation in the different pigs, with diets from one cause or another themselves really different, the total increase of the entire pen may still indicate, with some truth, the effects of the total food consumed in it—the smaller increase of the one pig with a deficient share of food being compensated by the larger gain of the other upon at the same time a larger and better share of food.

But to turn to the figures of the table. In the first 4 pens the Bean and Lentil mixture is given ad libitum; in Pen 1, without any other food; and we find that, with this very highly nitrogenous food alone, there is nearly as high a total gain, and a greater regularity of progress among the different pigs, and also throughout the several periods and the total period of the experiment, than in any other pen.

In Pen 2, besides the Bean and Lentil meal, there was an allowance of 2 lbs. of Indian-corn meal per pig per day; which, as we have said, contains much less of nitrogen, but more of the non-nitrogenous, starchy, and fatty matters, than the Beans and Lentils. Upon this mixed food the entire pen gives a greater increase than Pen 1 with its more highly nitrogenous diet. Pig No. 1 in this Pen 2 gave a much higher increase than either of the others,

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and a very regular one throughout the four periods; he was a large-framed hog, and grew very considerably as well as fattened. The other two pigs increase less than No. 1, though their increase is also very constant during the first three periods of the experiment; but, during the concluding fortnight they seem to have made much less progress. When they were killed, however, both these pigs were pronounced to be well fatted; and we shall presently see that the *consumption of food* in this pen decreased very much during the fourth period of the experiment; so that the probability is, that the reason of these two animals not increasing at the same rate as before, was that they were already ripe; from which cause both consumption and increase would naturally be lessened.

In Pen 3, 2 lbs. of Bran per pig per day is the limited food, and the Bean and Lentil mixture the complementary or ad libitum food. The Bran which constituted the *limited food* of this pen, contains, weight for weight, more nitrogen than the Indian meal of Pen 2, but less than the Bean and Lentil mixture, which was the only food in Pen 1. The Bran, however, contains rather more fatty matter than the Beans and Lentils, but much less of other non-nitrogenous constituents than either the Beans and Lentils, or the Indian corn. Excepting in the item of fatty matter, then —and of this the amount is, after all, inconsiderable—the bran is much inferior to either the Beans and Lentils or Indian corn, but especially so in the non-nitrogenous starchy series of compounds. The result is, that, although all the animals start well on this food, they all afterwards more or less rapidly decline in their rate of increase. The character of the deficiency of the food in this pen is best seen by comparing the result with that of Pen 2, in which 2 lbs. of Indian corn—so rich in the non-nitrogenous constituents—are given, instead of the 2 lbs. of Bran. This comparison clearly points to the dependence of the animals upon a due supply of the non-nitrogenous constituents of

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food—however liberally they may be provided with the nitrogenous ones.

In Pen 4, with Beans and Lentils still as the ad libitum food, we have 2 lbs. per pig per day both of Indian meal and of Bran, as the limited food. This diet we should suppose to be decidedly superior to that of Pen 3, but inferior to that of Pen 2. The result is a much better *total* increase than in Pen 3, though less than in either Pens 1 or 2. There was, however, in this Pen 4 one pig which gained very rapidly, and indeed twice as much on the whole as either of its companions. This very prosperous No. 1 pig was, compared with the others, a large-framed growing animal; and he was, moreover, a very obstinately masterful and selfish one, requiring the whip more frequently than any other of the entire Series. It is probable, therefore, that in spite of the care that was taken, he managed to secure more than his share of the best adapted food; and, besides this, he doubtless retarded the progress of the other two pigs by disturbing their repose and comfort.

In Pens 5, 6, 7 and 8, we have, instead of the Bean und Lentil mixture, Indian-corn meal as the ad libitum food; which, it will be borne in mind, contains much less of nitrogen, but much more of the non-nitrogenous constituents than the former.

In Pen 5 the Indian meal was given alone, ad libitum of course. One of the pigs on this food gained more than 2 lbs. a day during the first fortnight of the experiment; but the other two only about half as much. Before the end of this first period, however, it was observed, that this fast gaining pig, and one of the others, namely, No. 3, had large swellings on the side of their necks; and that at the same time their breathing had become much labored. It was obvious that the Indian corn meal alone, was in some way a defective diet; and it occurred to us, that it was comparatively poor both in nitrogen and in mineral mat-

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ter—though we were inclined to suspect that it was a deficiency of the latter rather than of the former, that was the cause of the ill effects produced. We were at any rate unwilling so far to disturb the plan of the experiments as to increase the supply of nitrogenous constituents in the food; and accordingly determined to continue the food as before, but, at least, to try the effect of putting within the reach of the pigs, a trough of some mineral substances, of which they could take if they were disposed. The mixture of which was prepared as follows:—20 lbs. of finely sifted coal ashes, 4 lbs. of common salt, and 1 lb. of superphosphate of lime. A trough containing this mineral mixture was put into the pen at the commencement of the second period, and the pigs soon began to lick it with evident relish. From this time the swellings or tumors, as well as the difficulty in breathing, which probably arose from the pressure of the former, began to diminish rapidly. Indeed, at the end of this second period the swellings were very much reduced, and at the end of the third they had disappeared entirely. No. 1 pig, which increased the most of the three during the first, third, and total periods of the experiment, it is seen only gained 6 lbs. during the second period; he was, however, during that time, the worst affected by disease as described above. As, however, his apparent increase was so great during the first and third periods, it is probable, that part at least of the deficiency in the intermediate period, was due to some temporary circumstance connected with his health, owing to which the contents of his stomach, &c., were unusually small at the time of his second weighing. The other two pigs in this pen give considerably less total increase than No. 1, but their rate of progress is comparatively very regular: that of No. 2 is singularly so; and No. 3, which was one of those affected by the swellings, nevertheless gives a gradually increasing rate of gain from the commencement up to the end of the experiment. We

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shall find too, further on, that the animals were satisfied with less of this food, though so poor in nitrogen, in proportion to their weight, than, with one exception, of any of the others; it will also be seen, that in spite of the comparatively small supply of nitrogen, and the comparatively small actual increase in weight of the pigs, yet this increase is, in reality, somewhat high, when calculated in relation to the amount of food consumed. Nor could the quality of the meat have suffered much; for a dealer in pork, with a practiced eye, selected and purchased the carcass of one of these pigs which had been diseased, from among the whole 36, after they had been killed and hung up. With these observations we may leave the result of this curious experiment for the present; but, before closing our statement of the facts of it, it may here be remarked, that of the mineral mixture described above, 9 lbs. were consumed by the 3 pigs during the first fortnight of its use, 6 lbs. during the second, and 9 lbs. during the third.

In Pen 6, with Indian corn meal as the complementary or ad libitum food, 2 lbs. of Bean and Lentil meal constitutes the limited food. Upon this diet, which contains a larger amount of nitrogen than that of Pen 5, but still a very liberal supply of the *non*-nitrogenous constituents, all the pigs begin well, and Nos. 1 and 3 give a regular and high rate of increase up to the end of the experiment; averaging, indeed, very nearly 2 lbs. per head per day. No. 2 gives, indeed, the highest increase during the first fortnight, but a decreasing one in the succeeding periods of the experiment. This No. 2 pig, however, was much riper at the last than either of the others; so that his comparatively small rate of increase as the experiment proceeded, is in no way disparaging to the quality of the food, but rather otherwise. And if, as we shall find further on, less food is consumed in proportion to the weight of the animal as he approaches maturity, we may suppose that

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this pig still did ample justice to all the food he consumed. Taking this explanation of the comparatively small increase of the No. 2 pig, it may be said that the diet of this pen 6, has given, upon the whole, a good and uniform rate of increase.

In Pen 7 the limited food is 2 lbs. of Bran per head per day; with still Indian corn as the ad libitum food. In this pen we have a very good total increase; but there is a great difference between the different pigs in this respect. No. 3 gives not only the highest total increase of any pig of the whole Series of 36, amounting to rather more than 2½ lbs. per day, but his gain is exceedingly constant throughout the whole experiment. No. 2, on the other hand, gives a pretty uniform rate of increase, but a total amount considerably less than half that of No. 3, and very much less than No. 1. The pig No. 2 was, however, from the beginning, very much molested by the thriving No. 3, and indeed, for a time, frequently jumped out of his pen to avoid the ferocious attacks of his greedy neighbor. There is little doubt that he was prevented taking as much food as he would otherwise have done; and his deficient increase can scarcely be wondered at. No. 1 pig was also at first much molested; indeed, he lost the greater part of his tail in one engagement; his increase, therefore, was comparatively small at the commencement, but afterwards it was much better, averaging upon the whole rather more than 1¾ lbs. per day. Eventually this pig was the fattest among the whole 36; and this full ripeness is doubtless the reason of the gradually declining rate of increase during the last three periods of the experiment. Upon the whole, this diet of a small allowance of Bran and a liberal supply of Indian corn, may be pronounced a very good food, and to have yielded well. The limited quantity of bran served somewhat to increase the supply of nitrogenous and mineral matters, and the large allowance of Indian corn provided a liberal amount, especially of fatty matter,

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and of the other important non-nitrogenous constituents of food.

In Pen 8 two lbs. of the Bean and Lentil mixture and 2 lbs. of Bran per pig per day was the fixed allowance; and Indian meal the complementary or ad libitum food. In this diet there would be a more liberal allowance of nitrogen than in either pens 5, 6, or 7, whilst there would be at the same time, enough of the Indian corn meal to provide a liberal supply of the important non-nitrogenous constituents. Every pig in this pen gave a good, and upon the whole, a pretty regular increase, though they differed somewhat from one another in this respect; and they all grew considerably as well as fattened. No. 1 on this diet gives the highest in the entire series of Pigs with one exception; and his daily gain in weight seemed to be on an average more than 2¼ lbs., with something like a gradually declining rate of increase from the commencement to the end of the experiment. No. 2 was not so fat as either of the others; and his increase, though still a fair one, was only about two-thirds that of No. 1. No. 3 increased nearly 2 lbs. per day, but less as he progressed, and though well fatted, was by no means as fat as many others. The average increase of this entire pen is more than 2 lbs. per head per day. It would appear that a small proportion of *Bran*, with otherwise highly nutritive food, is by no means unfavorable in the fattening food of the pig. The results of the next 4 pens, however, will show, that the limit of the usefulness of Bran as a fattening food is very soon reached; and that with 2 or 3 lbs. per pig per day of Beans and Lentils, or of Indian corn, or even of both, an unlimited supply of Bran in addition, is insufficient to enable the animals to do much more than keep up a good store condition.

In Pens 9, 10, 11, and 12 Bran was given as the unlimited or complementary food; in the three former with the other foods in limited quantity; in Pen 12, with all the foods ad libitum.

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In Pen 9 the limited food during the first fortnight was 2 lbs. of Beans and Lentils per pig per day, with Bran ad libitum. Upon this diet No. 1 Pig only increased 7 lbs., No. 2, 2 lbs., and No. 3 nothing at all, during the fourteen days. In this food, with a limited supply of Beans and Lentils, and Bran ad libitum, which has yielded such a bad result, there was a more liberal supply of nitrogenous constituents than in many of the previous pens; and it will be seen further on that it was the *non*-nitrogenous matters that were wanting in this diet. We shall find, indeed, that beyond a somewhat narrow limit which is attained with almost any of our current fatting foods, any defect is much more likely to be connected with a deficiency of the important *non*-nitrogenous constituents than of the nitrogenous ones. This remark of course refers only to the quality of food *as such*, that is as a source of the support and increase of the animal, and not to its value as a means of *Manure*, which, in its turn, depends almost entirely upon the amount of *nitrogen* which the food contains. With such plain indications as the results of this pen afforded during the first fortnightly period, it was determined to increase from that time the daily allowance of beans and lentils from 2 lbs. to 3 lbs. Notwithstanding this increase in the allowance of the food, which, when given alone and in large quantity in Pen 1, yielded so large an increase, the gain in this pen continued to be scarcely more than one-third as much as the average in many of the pens. Two of the pigs indeed in this pen, Nos. 1 and 3, gave a somewhat regular though but small increase; but No. 2 gained only 6 lbs. during the entire of 8 weeks. Almost from the commencement of the experiment this No. 2 pig became unwell, being as it were paralyzed and deprived of the use of its limbs; but as he had progressed quite as well as the average during the period preliminary to the exact experiment, it was supposed that this was only the natural effect of the defective diet, and hence it was decided not to alter the food,

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but to let hime take his course, in order to obtain the full and marked effect of this food in comparison with that of the other pens.

In Pen 10, Bran was still the ad libitum food; but Indian corn meal, instead of Beans and Lentils, as in Pen 9, was the limited food. The diet of Pen 10 would therefore contain less of the nitrogenous and more of the non-nitrogenous constituents, than that of Pen 9. The result of this is, upon the whole, a decidedly better rate of increase. During the first period, however, when only 2 lbs. of the limited food were given, there was, it is true, a loss of weight of 8 lbs. in one animal; but after the Indian corn was increased to 3 lbs. per pig per day, as the Beans and Lentils had been in Pen 9, this pig, as well as the others, gave a pretty regular, though still comparatively small increase in weight. The progress upon this diet, could, however, scarcely be considered more than that of good store food; though nevertheless it is clear, that the addition of the low nitrogenous and highly starchy Indian corn to the unlimited Bran, gave a much better food, than when, instead of the former, the highly nitrogenous Beans and Lentils had been given, as in Pen 9.

In Pen 11, with Bran still as the complementary or unlimited food, the limited allowance is more liberal than in the two preceding pens; namely, 2 lbs. of the Bean and Lentil mixture, and 2 lbs. of Indian corn meal also. The result is a marked improvement, as compared with Pens 9 and 10. The proportion of Bran in the food is, however, still apparently much too high for the purpose of rapid fattening. What really were the actual relative proportions of the limited to the unlimited food, is a question we need not stop to consider in this place; but full particulars on this point are given in Tables XI, XII, and XIII, in respect to the food in all the pens. To proceed, then, with the results of the food in this Pen 11, it may be remarked, that the pigs fed upon it grew rather than merely fattened;

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and eventually they were, compared with those in many of the other pens, little more than half fat. From some unexplained cause, one of the pigs in this pen was less regular in his rate of progress than the rest; but we think that the results, as a whole, may safely be taken as giving a fair measure of the comparative feeding value of the food employed.

In the 12th, and last Pen of this Series, as before observed, each of the three descriptions of food was allowed ad libitum; that is to say, one trough was kept constantly supplied with the Bean and Lentil mixture, another with Indian corn meal, and another with Bran; so that in this case the pigs were allowed to fix for themselves entirely, the quantity and proportion of the several foods. It might have been supposed, that by this arrangement the animals would be placed under more favorable circumstances for rapid progress than in any of the other pens. But, if the result were to be taken as a strict measure of the comparative productive value of the food consumed, we must decide quite otherwise. Thus one of the pigs, No. 2, though during the first fortnight he gave a pretty fair increase, from that time became unwell and lost the use of his limbs, as in the instance already noticed. He was entirely unable to walk, and could scarcely support himself at the trough, and, as seen in the Table, he only gained 3 lbs. in the second period, and only 1 in the third; though during the fourth he somewhat recovered, and then gave an increase of 17 lbs. The other two pigs in this pen, however, gave a very fair increase, at a gradually diminishing rate as the experiment proceeded, and eventually they gave the highest proportions of *dead* weight to live, of any of the entire series of 36 pigs; and they were, therefore, undoubtedly well ripened. We may perhaps fairly conclude that the bad result of the No. 2 pig seriously reduced the apparent productive value of the food in this pen; at any rate, it would seem contrary to the

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facts to suppose, that in consulting their own inclination, this was not calculated to guide the animals to the selection best adapted to their progress, when we find, that under this arrangement two of the pigs matured more completely than any others of the entire Series. It is to be regretted, that the exact proportions of the several foods actually consumed by the two pigs who gave such a good result, cannot be stated separately from that of the other and faulty pig. We shall find, however, that the results of the entire pen in this respect are still of considerable interest, as will be seen in the following table:

TABLE IV.

(*Experiments with Pigs.—Series I.*)

Showing the Proportions in 100 Parts, in which the several Foods were consumed in Pen 12, during the 4 successive Periods of the Experiment.

	Beans and Lentils.	Indian Corn.	Bran.	Total Food.
1st Period of 14 Days,.....	63	30	7	100
2d " "	51⅓	45	3	100
3d " "	38¼	56¼	5½	100
4th " "	43.2	52	4 8	100
Mean of the 8 Weeks,.....	49 9	45.9	4 2	100

If we suppose, as we fairly may do, that the two healthy and flourishing pigs in this pen mainly determined these proportions, in which the several foods were taken, it is plain, that as they ripened, they naturally selected less of the nitrogenous and more of the starchy and fatty food. There is, indeed, a trifling exception to this rule in the last period of the experiment, during which 43¼ per cent. of the food taken was Beans and Lentils; whilst in the previous period there had been consumed of these only 38¼ per cent.; and again, with 56¼ per cent. of the Indian corn in the third period, there is only 52 per cent. in the fourth. But, as it was during the fourth period that the sickly pig improved and took its food more freely, may we not conclude that the increased proportion of the Bean and Lentil mixture consumed during this period was due to his freer consumption of it? Notwithstanding this ir-

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regularity, however, the proportion of Beans and Lentils consumed in the last period in the entire pen, is only two-thirds as great as that in the first; whilst, on the other hand, the Indian-corn, which in the first period only constituted 30 per cent. of the food consumed, amounted in the fourth period to as much as 52 per cent.

At any rate, the general fact of a considerably decreasing demand for nitrogenous constituents, and an increasing one for the non-nitrogenous ones, as the animals mature, is sufficiently marked. It is, too, of considerable interest, and serves to justify the practice of diminishing the supply of the leguminous seeds, (peas, beans, &c.,) and increasing that of barley-meal to the fatting pig as he approaches maturity, as is the pretty general custom when a liberal system of fattening is adopted.

Before leaving the last table it may be noticed, that the average proportion of Bran taken by these pigs was less than 5 per cent. of their total food.

We have thus far given an account of the selection and management of the pigs in this First Series of experiments—a statement of the weights of the animals—a general description of the foods allotted to the several pens—and a somewhat detailed account of the progress in each pen, and even of each pig, upon the 12 different dietaries which it comprised. We have thought it desirable, indeed, in reference at any rate to the First Series of experiments, somewhat minutely to call attention to any such irregularities within the pens as might be supposed to affect the legitimacy of comparisons founded upon the gross results of the entire pen. These observations will have given the reader a considerable insight into the general character of the results; and they will enable him to form his own conclusions respecting them. But we think it will be seen that, notwithstanding the irregularities that have been pointed out, there is still much of consistency in the indications of the mere gross result of each pen,

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upon which henceforth we shall found our conclusions; and we shall therefore go into less detail on these points in the account of the other Series of experiments.

We have yet to consider, however, much more minutely, the influence of the composition of the food upon the rate of consumption, and the progress of the pigs in this First Series of experiments. But these and some other points will be discussed with more advantage in reference to the results of all the series together. Before proceeding further, therefore, with this First Series, we shall describe thus far, the particulars and results of a Second and of a Third Series of experiments with Pigs.

The First Series of experiments—in which Beans and Lentils were the highly nitrogenous food, Indian-corn meal the comparatively non-nitrogenous food, and Bran the more bulky and less nutritious one—had afforded very clear indications as to the comparative feeding values of the different classes of constituents which characterize these different foods. It was decided, therefore, to conduct the Second Series on a somewhat similar plan. In this case, however, the Indian corn of the former series was substituted by the more usual pig food, *Barley meal.* It was also thought desirable to alter the proportions of the limited to the unlimited food—3 lbs. instead 2 lbs. per pig per day of limited food being now given when it consisted of the Bean and Lentil mixture or of Barley meal, and only 1 lb. when Bran. It was further determined in no case to give Bran alone, as the complementary or ad libitum food.

Like the former one, this Series consisted of 12 pens with 3 pigs in each. Pens 1, 2, 3 and 4 had, as before, the Bean and Lentil mixture as the ad libitum food. In Pens 5, 6, 7 and 8, Barley meal was the ad libitum food. In Pens 9, 10, 11 and 12 there was no allowance of limited food; but in Pens 9 and 10 a mixture of certain proportions of the several foods was given ad libitum; and in

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Pens 11 and 12 a similar mixture, but containing different proportions respectively of the more and the less highly nitrogenized foods.

The following is a detailed description of the 12 dietaries of this Second Series:

Pen 1. Bean and Lentil meal (equal parts) ad libitum.

Pen 2. 3 lbs. per pig per day of Barley meal; and the Bean and Lentil mixture, ad libitum.

Pen 3. 1 lb. of Bran per pig per day; and the Bean and Lentil mixture, ad libitum.

Pen 4. 3 lbs. of Barley meal and 1 lb. of Bran per pig per day; and Bean and Lentil mixture, ad libitum.

Pen 5. Barley meal only, ad libitum.

Pen 6. 3 lbs. per pig per day of Bean and Lentil mixture; and Barley meal, ad libitum.

Pen 7. 1 lb. of Bran per pig per day; and Barley meal, ad libitum.

Pen 8. 3 lbs. of Bean and Lentil mixture and 1 lb. of Bran per pig per day; and Barley meal, ad libitum.

Pen 9. A mixture of 1 part Bran, 2 parts Barley meal, and 3 parts Bean and Lentil mixture, ad libitum.

Pen 10. Duplicate of Pen 9.

Pen 11. A mixture of 1 part Bran, 2 parts Bean and Lentil mixture, and 3 parts Barley meal, ad libitum.

Pen 12. Duplicate of Pen 11.

On April 26th, 1850, the pigs were allotted by weight to the different pens. They were taken from a stock of 40, all of about nine months old, which had been bought at different styes and markets, in lots respectively of four, nine, eight, eight, and eleven; and, as before, they were on the following day changed from pen to pen, so as to disturb as little as possible the weight within each pen, and at the same time to secure greater equality as to the character of the animals between pen and pen.

Table V., which follows, shows the weights of the pigs in each pen as thus allotted.

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TABLE V.

(*Experiments with Pigs.—Series II.*)

Showing the Weights of the Pigs (in lbs.) when Allotted to the Pens, April 26, 1850.

Nos of the Pigs.	Pen 1	Pen 2	Pen 3	Pen 4	Pen 5	Pen 6	Pen 7	Pen 8	Pen 9	Pen 10	Pen 11	Pen 12
	lbs	lbs.	lbs.	lbs.	lbs.	lbs.	lbs	lbs.	lbs	lbs.	lbs.	lbs.
1.....	138	138	138	137	136	134	134	133	129	128	127	127
2.....	117	125	124	120	122	123	120	120	126	125	124	127
3.....	115	105	106	114	111	112	112	113	116	116	116	116
Total weights of 3 pigs,	370	368	368	371	369	369	366	366	371	369	367	370

After the allotment and this first weighing, all the pens were supplied with a mixture (given ad libitum) of one part Bran, one part Bean and Lentil meal, and one part Barley meal. Upon this food they were kept for 13 days prior to commencing the exact experiment. There was, as usual, some inconvenience during this preliminary period until the pigs became accustomed to their new situation and new companions; and this, of course, accounts for some of the irregularity in increase during this period, as shown in Table VI., which follows.

TABLE VI.

(*Experiments with Pigs.—Series II.*)

Showing the Weight (in lbs.) Gained during the 13 Days of the Preliminary Period, and also the Actual Weights at the Commencement of the exact Experiment, May 9, 1850.

	PEN 1.		PEN 2.		PEN 3.		PEN 4.		PEN 5.		PEN 6.	
Nos. of the Pigs.	Gain in 13 Days.	Weight May 9.	Gain in 13 Days.	Weight May 9.	Gain in 13 Days.	Weight May 9.	Gain in 13 Days	Weight May 9.	Gain in 13 Days.	Weight May 9	Gain in 13 Days.	Weight May 9.
	lbs.	lbs.	lbs.	lbs.	lbs	lbs.	lbs	lbs.	lbs	lbs.	lbs.	lbs.
1.....	20	158	27	165	17	155	16	153	30	166	15	149
2.....	16	133	23	148	6	130	16	136	27	149	20	143
3.....	27	142	28	133	14	120	28	142	22	133	24	136
Totals,....	63	433	78	446	37	405	60	431	79	448	59	428

Nos. of the Pigs.	PEN 7.		PEN 8.		PEN 9.		PEN 10.		PEN 11.		PEN 12.	
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1.....	19	153	18	151	18	147	7	135	23	150	0	127
2.....	23	143	19	139	17	143	14	139	12	136	10	137
3.....	18	130	16	129	24	140	21	137	23	139	22	138
Totals,....	60	426	53	419	59	430	42	411	58	425	32	402

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On May 9th, then, the exact experiment was commenced; and the pigs were now put upon the dietaries which have been already described. The management, as to the supply of food, &c., was the same as before. The pigs themselves were weighed every 14 days; and the experiment was continued for four such periods—that is, for a total period of 8 weeks.

The following Table (VII.) gives the increase in weight per pig and per pen in this Second Series.

Table VII.

(*Experiments with Pigs.—Series II.*)

Showing the *Gain in Weight* (in lbs.) upon each of the 12 different Dietaries, of *each Pig*, and of the *Pen of three Pigs*, during each Period of 14 Days, and during the entire experimental Period of 8 Weeks.

	PEN 1. Beans and Lentils (equal parts) Ad Libitum.					PEN 2. 3 lbs Barley Meal per pig per Day; Beans and Lentils (equal parts) Ad Libitum.				
Nos. of Pigs.	First Period, 14 Days.	Second Period, 14 Days	Third Period, 14 Days	Fourth Period, 14 Days.	Total Period, 8 Weeks	First Period, 14 Days.	Second Period, 14 Days	Third Period, 14 Days.	Fourth Period, 14 Days	Total Period, 8 Weeks.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1.....	33	7	13	24	77	41	22	28	29	120
2.....	3	4	Died June 9.	..	1	10	14	25	16	65
3.....	23	34	25	35	117	25	20	27	27	99
3 pigs,..	53	45	38	59	195	76	56	80	72	284

Nos. of Pigs.	PEN 3. 1 lb. Bran per pig per Day; Beans and Lentils (equal parts) Ad Libitum.					PEN 4 3 lbs. Barley Meal and 1 lb. Bran per Pig per Day; Beans and Lentils (equal parts) Ad Libitum.				
1.....	20	16	22	25	83	23	21	24	19	87
2.....	25	12	25	19	81	26	16	17	Killed June 28	59
3.....	24	16	18	20	78	24	21	31	18	94
3 pigs,..	69	44	65	64	242	73	58	72	37	240

Nos. of Pigs.	PEN 5. Barley Meal, Ad Libitum.					PEN 6. 3 lbs. Bean and Lentil Meal per Pig per Day; Barley Meal, Ad Libitum.				
1.....	Died May 16	24	28	10	62	35	15	11	14	75
2.....	37	35	41	29	142	39	23	28	23	113
3.....	29	19	21	18	87	28	15	20	Died June 20	63
3 pigs,..	66	78	90	57	291	102	53	59	37	251

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TABLE III.—(CONTINUED.)

(Experiments with Pigs.—Series III.)

Nos of Pigs.	PEN 7. 1 lb. Bran per Pig per Day; Barley Meal, Ad Libitum.					PEN 8 3 lbs. Bean and Lentil Meal and 1 lb. Bran per Pig per Day; Barley Meal Ad Libitum.				
Numbers of Pigs.	First period, 14 days.	Second period, 14 days	Third period, 14 days	Fourth period, 14 days	Total period, 8 weeks	First period, 14 days.	Second period, 14 days	Third period, 14 days.	Fourth period, 14 days.	Total period, 8 weeks
1.....	30	20	21	24	95	35	17	29	20	101
2.....	35	22	17	22	96	3	Died May 29	..	..	3
3.....	29	21	15	21	86	37	16	22	14	89
3 pigs.	94	63	53	67	277	69	33	51	34	187

Nos. of Pigs.	PEN 9. Mixture of 1 part Bran, " 2 parts Barley Meal, and " 3 parts Beans & Lentils, Ad. Libitum.					PEN 10. Duplicate of Pen 9.				
1.....	3	20	28	Died June 20	45	28	24	19	22	93
2.....	32	21	22	21	96	29	14	18	18	79
3.....	31	30	25	26	112	31	33	20	27	111
3 pigs,...	60	71	75	47	253	88	71	57	67	283

Nos. of Pigs.	PEN 11. Mixture of 1 part Bran, " 2 parts Beans and Lentil Meal, and " 3 parts Barley Meal, Ad. Libitum.					PEN 12. Duplicate of Pen 11.				
1.....	32	24	22	27	105	43	22	24	21	110
2.....	41	27	18	24	110	31	16	25	26	98
3.....	27	20	24	24	95	30	17	24	28	99
3 pigs,...	100	71	64	75	310	104	55	73	75	307

An inspection of this Table (VII.) shows that five of the pigs of this second series died during the experiment. It would appear that we were very unfortunate in one of the purchases, for all of these five pigs belonged to one of the lots of eight, and hence the loss was most probably due to the bad constitution of the animals. The weather was, however, excessively hot during part of the period of this experiment, and therefore unfavorable to the health of pigs fattening on a very liberal diet. It was evident that many did suffer from this cause; and that some of the losses were indeed in a great measure attributable to it.

These accidents, of course render it quite impossible to form any judgment of the value of the different foods by a comparison of the *actual gross results* of pen with pen.

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But we shall find, that, even with this greater irregularity in the amounts of actual increase obtained per pen than in the previous series, there is still, when we come to consider this increase in relation to the amounts of food consumed, much of consistency in the results throughout this Series; and also, that their indications agree very closely with those of the previous Series. If too, in looking at this Table of the increase of each pig, we exclude those which died, we shall see, that upon the whole, the actual increase per pig upon any particular food, is seldom inferior in this Series, and sometimes superior, to that upon the food most nearly corresponding with it in the previous Series.

Having, then, thus shortly called attention to the irregularities in the results of this Second Series, we shall not go into the same detail on these points as we thought it well to do in reference at least to one set of the experiments; for, as we have already observed, notwithstanding the numerous incidental circumstances which were then pointed out affecting the actual increase of the pigs, it will still be found, that there was a great consistency throughout, in the relationship of increase to food consumed; and, as we have said, it will be seen too, that there was a similar consistency in the results of this Second Series, both when compared among themselves and with those of Series I.

But, before going further into these points, we will here briefly notice the arrangement and actual results of the Third and last series of experiments.

This Third Series consists of 5 pens, with 4 pigs in each. These five experiments were, however, not all conducted at the same time; those with the first three pens being silumtaneous with the First Series, and those with Pens 4 and 5 with Series II. Indeed, the pigs of this series were those which had been thrown out in making the selection from the whole stocks for the other two series; so that

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those in some of the pens were not, in point of weight or similarity, well calculated for comparison with the rest. Thus, although the pigs in Pens 1 and 2, of Series III, compared very well with each other in these respects, and were all exceedingly fine pigs, and very kindly feeders, those in Pens 3 were all odd pigs, and of very different weights and quality from the former. Pens 4 and 5, again, compared pretty well with each other as to the pigs allotted to them, but these 8 pigs were only about 7 months old, and they were more finely framed than those in the other pens, and did not therefore assort well with them. The five pens are, however, thus classed together on account of the general similarity throughout in the description of the food employed; and, notwithstanding the circumstances which have been mentioned, we shall find further on, that—with some peculiarity of result in this series, as compared with the former, arising from the character of the food employed—there is still, on comparing these five pens one with another, more of consistency than we might have anticipated, when we consider the increase obtained, in relation to the constituents of food consumed.

In Tables VIII. and IX., which follow, we have the weights of the pigs in this Series when allotted to the pens—their gain in weight during the preliminary periods—and their weights at the commencement of the exact experiment.

Table VIII.

(Experiment with Pigs.—Series III.)

Showing the weights of the Pigs (in lbs.) when allotted to the Pens, (Pens 1, 2, and 3, Feb. 2, 1850—Pens 4 and 5, April 26, 1850.)

Nos. of pigs.	PEN 1.	PEN 2.	PEN 3.	PEN 4.	PEN 5.
	lbs.	lbs.	lbs.	lbs.	lbs.
1,.....	119	166		104	104
2,.....	156	143	Weights not taken.	101	100
3,.....	140	126		95	100
4,.....	145	141		96	86
Total weight of 4 pigs,..	560	560	—	396	390

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TABLE IX.

(Experiments with Pigs.—Series III.)

Showing the weight (in lbs.) gained during the preliminary period; and also the actual weights at the commencement of the exact Experiment, (Feb. 14, 1850, for Pens 1, 2, and 3; May 9, 1850, for Pens 4 and 5.)

	PEN 1.		PEN 2.		PEN 3.		PEN 4.		PEN 5.	
Nos. of the Pigs.	Gain in 12 days.	Weight Feb. 14.	Gain in 12 days.	Weight Feb. 14.	Gain in 12 days.	Weight Feb. 14.	Gain in 13 days.	Weight May 9.	Gain in 13 days.	Weight May 9.
	lbs.	lbs.	lbs.	lbs	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1,.....	20	139	26	192	..	123	16	120	20	124
2,.....	15	171	15	158	..	138	19	120	19	119
3,.....	18	158	14	140	..	129	22	117	13	113
4,.....	19	164	16	157	..	143	17	113	22	108
Totals,...	72	632	71	647	..	533	74	470	74	464

As seen in Table VII., the pigs in Pen 3 were not weighed when first allotted to the pens; and hence their gain in weight during the preliminary period cannot be given, but only their actual weight at the commencement of the experiment. The gain in weight in Pens 1, 2, 4, and 5 is seen to be singularly uniform during the preliminary periods; and the actual weights at the commencement of the experiment, of Pens 1 and 2 respectively, and again of Pens 4 and 5, agree very well together.

These five pens were devoted to the trial, as pig-food, of *dried Newfoundland cod fish*—an article which could be supplied in large quantities, and at a moderate price, were it found available for this purpose. The experiments were so arranged as to ascertain in what proportions it could be most advantageously mixed with other foods: the dried cod fish containing, as will he seen in our Table of Composition, a much higher percentage of nitrogen than any other current pig food. Hence, if it were found otherwise available, it would yield a manure of corresponding richness.

It should be stated, that during the preliminary period, the pigs in Pens 1, 2, and 3 of this Series were supplied with the same food as had been given in the 12 pens of the First Series; namely, one part Bean and Lentil mixture,

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one part Indian corn, and two parts Bran. Pens 4 and 5, however, were provided, during their preliminary period, with half a pound per pig per day of the dried Cod fish, and were allowed to take ad libitum of a mixture of one part Bean and Lentil meal, one part Barley meal, and one part Bran. The Cod fish was in all cases prepared by boiling in water; and a portion of the other food was then stirred in with a soup thus obtained. It is scarcely necessary to mention that in all the experiments with pigs the food was mixed with water before it was put into the troughs.

The allowance of food to the several pens of the Third Series was as follows:

Pen 1. 2 lbs. of dried Cod fish per pig per day: with a mixture of equal parts of Indian meal and Bran, ad libitum.

Pen 2. 2 lbs. of dried Cod fish per pig per day; with Indian meal, ad libitum.

Pen 3. Cod fish, and a mixture of equal parts of Indian meal and Bran, each ad libitum.

Pen 4. 1 lb. of Cod fish per pig per day; with a mixture of 2 parts Barley meal and 1 part Bran, ad libitum.

Pen 5. 1 lb. of Cod fish per pig per day; with Barley meal, ad libitum.

Table X. gives the increase of each pig, and of each pen, upon these dietaries, during each fortnightly period, and the total period of eight weeks.

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TABLE X.

(*Experiments with Pigs.—Series III.*)

Showing the *Gain in Weight* (in lbs.) upon each of the Five different Dietaries—of *each Pig*, and of the *Pen of Four Pigs*—during each Period of 14 Days—and during the entire Experimental Period of 8 Weeks.

	PEN 1. 2 lbs. Cod Fish per Pig per Day; Bran and Indian Meal (equal parts) Ad Libitum.					PEN 2. 2 lbs. Cod Fish per Pig per Day; Indian Meal, Ad Libitum.					PEN 3. Bran and Indian-Meal, (equal parts.) and Cod Fish, each Ad Libitum.					PEN 4. 1 lb. Cod Fish per Pig per day; Mixture of 2 parts Barley Meal and 1 part Bran Ad Libitum.					PEN 5. 1 lb. Cod Fish per Pig per day; Barley Meal, Ad Libitum.				
Pig Nos.	1st Period, 14 Days.	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.	1st Period, 14 Days.	2d Period, 14 Days	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.	1st Period, 14 Days.	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.	1st Period, 14 Days	2d Period, 14 Days.	3d Period, 14 Days	4th Period, 14 Days.	Total Period, 8 Weeks.	1st Period, 14 Days	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.
	lbs	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
1.....	35	14	13	10	72	20	28	37	30	115	39	21	11	21	92	23	27	13	20	83	33	27	24	17	101
2.....	27	25	25	25	102	20	30	13	28	91	23	20	17	14	74	21	15	16	12	64	31	23	23	21	98
3.....	17	31	22	21	57	39	29	32	22	122	19	17	16	16	68	27	19	19	18	83	44	25	22	3	94
4.....	18	26	25	23	92	3	17	24	23	61	1	20	16	15	52	19	16	3	39	71	30	23	21	9	83
4 Pigs,..	63	96	85	79	323	76	104	106	103	389	82	78	60	66	286	90	77	45	89	301	138	98	90	50	376

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As the experiment proceeded with Pens 1, 2 and 3, it was obvious that the fixed allowance of 2 lbs. of Cod Fish per pig per day, in the two former, was more than they would have taken had it not been so mixed with their other food as to oblige them to do so. It was evident, too, that the proportion of one part Bran to one part only of the Indian Meal, in the ad libitum food of Pens 1 and 3, was also too great. In Pens 4 and 5, therefore, as the Table shows, only 1 lb. of Cod Fish per pig per day was given as the limited food; and in Pen 4, where Bran was given in the ad libitum food, the mixture was composed of only one part Bran to two parts of the Barley Meal.

The Table shows at a glance that there was throughout this Series, with Cod Fish, a very fair rate of increase per head; and we shall see further on, that the increase was also comparatively high in relation to the amonnt of food consumed. We observe, too, a marked superiority in Pen 2, where the Indian Meal was given alone as ad libitum food, over Pen 1, where it was mixed with Bran; and the same in Pen 5 over Pen 4; the Barley Meal being mixed with Bran in the latter, and given alone in the former. This is only what we might expect, and the result is very consistent in the two cases.

The pigs in Pens 1 and 2 of this Cod Fish Series were exceedingly fat; they indeed looked better than any, either in this or in either of the other Series. We shall have occasion to remark again on this experiment further on.

Before leaving the actual experimental results of these three Series of Pig experiments, and considering them more closely when brought by calculation to one uniform standard of comparison, or more minutely in reference to the chemical composition of the foods, it may be convenient to show the average *weekly* consumption *per head* of the unlimited, as well as of the limited, food; and also the average *weekly increase* obtained *per head* during each pe-

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riod, and the total period, in each of the 29 pens which the three Series of experiments comprise. These particulars are given for the several Series respectively in Tables XI., XII., and XIII., which follow.

TABLE XI.

(*Experiments with Pigs.—Series I.*)

Showing the Average Weekly Consumption of Food, and Increase in Weight per Head, during each Period, and the total Period of the Experiment.

Pen, Nos., &c.		Description, and average quantity of Food consumed per Pig, per Weeek, (lbs.)		Average Weekly Increase in Live Wegiht (lbs.) per Pig, during each Period, and the total Period of the Experiment.				
Pen.	Pigs.	Limited Foods.	Ad Limitim Foods.	1st Period, 14 days.	2d Period, 14 days.	3d Period, 14 days.	4th Period, 14 days.	Average of 8 weeks.
1	3	None, ...	63 lbs. bean and lentil meal, (equal parts,,	12.83	13.83	12.00	11.83	12.62
2	3	14 lbs. Indian meal,.....	52 lbs. do ..	16.00	15.66	14 00	10.33	14 00
3	3	14 lbs. bran,.....	40¼ lbs. do ..	13.83	10.00	3.66	5.83	8.33
4	3	14 lbs. Indian meal, 14 lbs. bran,.....	31½ lbs. do ..	11.50	8.83	9.66	12.00	10.50
5	3	None, ...	45¼ lbs. Indian meal,....	9.66	6.00	12.00	9.18	9.21
6	3	14 lbs. bean and lentil meal, (equal parts,)	44¼ lbs. do	11.18	13.66	9.83	12.00	12.42
7	3	14 lbs. bran,.....	44¼ lbs. do	11.00	14.67	13.83	12.00	12.87
8	3	14 lbs. bean and lentil meal (equal parts,) 14 lbs. bran,	36¾ lbs. do	17.50	14.50	11.18	14.66	14.46
9	3	14 lbs. bean and lentil meal, (equal parts,)	18 lbs. bran,.....	1.50	5.00	4.83	5.33	4.16
10	3	14 lbs Indian meal, ...	23½ lbs. do	0.83	6.83	5.83	5.50	4.75
11	3	14 lbs. bean and lentil meal, (equal parts,) and 14 lbs. Indian meal, ...	18 lbs. do	9.33	6.50	6.50	7.33	7.42
12	3	None, ...	28½ lbs. bean and lentil meal, (equal parts, ... 25½ lbs. Indian meal, 3 lbs. bran, ...	15.83	10.83	7.00	8.66	10.58

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TABLE XII.

(*Experiments with Pigs.—Series II.*)

Showing the Average Weekly Consumption of Food and Increase in Weight per head during each Period, and the Total Period of the Experiment.

Pen, Nos. &c.		Description and Average quantity of Food consumed per Pig, per Week, (lbs.)		Average Weekly Increase in Live Weight (lbs.) per Pig, during each Period, and the Total Period of the Experiment.				
Pen:	Pigs.	Limited Foods.	Ad Libitum Foods.	1st Period, 14 Days.	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Average of 8 Weeks.
1	3	None, ...	44 lbs bean and lentil meal, (equal parts)	8.83	7.50	9.50	14.75	10.14
2	3	21 lbs barley meal, ...	51½ lbs. do ..	12.67	9.33	13.33	12.00	11.83
3	3	7 lbs. bran,.....	52¾ lbs. do ..	11.50	7.33	10.83	10.67	10.08
4	3	21 lbs. barley meal and 7 lbs. bran,.....	33 lbs. do ..	12.17	9.67	12.00	9.25	10.77
5	3	None,.....	68½ lbs. barley meal, ...	10.00	13.00	15.00	9.50	12.12
6	3	21 lbs. bean and lentil meal, (equal parts,)	37¾ lbs. do ..	17.00	8.83	9.83	9.25	11.23
7	3	7 lbs bran, ...	57½ lbs. do ..	15.67	10.50	8.83	11.17	11.54
8	3	21 lbs. bean and lentil meal, (equal parts) and 7 lbs. bran,...	25 lbs. do ..	11.50	8.25	12.75	8.50	10.25
9	3	None,.....	61½ lbs. of mixture of 1 part bran, 2 parts barley meal, and 3 parts bean and lentil meal,.....	10.00	11.83	12.50	7.83	10.54
10	3	None, ...	64¾ lbs., duplicate of Pen 9,.....	14.67	11.83	9.50	11.17	11.79
11	3	None, ...	65 lbs. of mixture of 1 part bran, 2 parts bean & lentil meal, and 3 parts barley meal,.....	16.67	11.83	10.67	12.50	12.92
12	3	None, ...	64 lbs, duplicate of Pen 11, ...	17.33	9.17	12.17	12.50	12.79

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TABLE XIII.

(*Experiments with Pips.—Series III.*

Showing the *Average Weekly Consumption* of Food and Increase in Weight *per Head*, during each Period, and during the Total Period of the Experiment.

Pen, Pigs, &c.		Description and Average quantities of Food consumed per Pig, per Week, (lbs.)		Average Weekly Increase in Live Weight (lbs.) per Pig, during each Period, and the Total Period, of the Experiment.				
Pen.	Pigs.	Limited Foods	Ad Libitim Foods.	1st Period, 14 Days.	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Average of 8 Weeks.
1	4	14 lbs. codfish,.....	47 lbs. of mixture of bran and Indian meal, (equal parts, ...	7.87	12.00	10.62	9.87	10.09
2	4	14 lbs. codfish,.....	45¼ lbs. Indian meal,.....	9.50	13.00	13.25	12.87	12.15
3	4	None,.....	47 lbs. of mixture of bran and Indian meal, (equal parts,) and 7½ lbs. codfish,.....	10.25	9.75	7.50	8 25	8.94
4	4	7 lbs. codfish.....	49 lbs. of mixture of 2 parts barley meal and 1 part bran,.....	11.25	9.63	5.62	11.25	9.40
5	5	7 lbs. codfish,.....	57½ lbs. barley meal,.....	17.25	12.25	11.25	6.25	11.75

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From these Tables we learn the fact that the pigs consumed on an average, about 60 lbs. of corn per head per week—or nearly 9 lbs. per head per day; and that where the quality of the food was good, they yielded from 10 lbs. to 12 lbs. of increase in live weight per head per week—or about 1½ lb. per head per day.

The amounts of food consumed per week, as given in these Tables (XI., XII, XIII.,) are, it will be remembered, the averages of the whole period calculated *per head;* and those of the average weekly increase produced are also calculated per head; but the latter is given for each separate period, as well as for the total period. In the Tables which next follow, however, (XIV., XV., XVI.,) we have the weekly consumption of food *per* 100 *lbs. live weight of animal,* instead of per head; and calculated for each period of the experiment separately, instead of only for the total period. We have now, too, instead of the rate of increase *per head* during each separate period, the amount of increase obtained *for each* 100 *lbs. of food consumed.* In these tables, therefore, we have the rate of *consumption* and of *increase,* during the successive periods of the experiment—each calculated to a uniform standard. And, it will be seen, that the results as thus arranged, clearly bring to view the influence of the progress of the animal, both upon the rate of consumption of food, and upon its productiveness—as already briefly alluded to, when commenting upon the results of Pen 12 of the First Series of experiments. We shall call attention to these Tables somewhat in detail.

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TABLE XIV.

(*Experiments with Pigs.—Series I.*)

Showing the Average Weekly Consumption of Food per 100 lbs. Live Weight of Animal—and also the Increase in Weight obtained by the consumption of every 100 lbs. of Food, during each of the Successive Periods, and the Total Period of the Experiment.

Pen Nos.	Description and Quantities of Limited Food per Pig per Day.	Description of Ad Libitum or Complementary Food.	DIVISION I. Average Weekly Consumption of Fresh Food, per 100 lbs. of Live Weight of Animal.					DIVISION II. Increase obtained by the Consumption of 100 lbs. Fresh Food.					Average Weekly Consumption of Food per 100 lbs. Live Weight of Animal.
			1st Period, 14 Days.	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.	1st Period, 14 Days.	2d Period, 14 Days	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.	
1	None,	Bean and lentil meal,	37.2	36.7	30.0	26.6	32.0	21.6	20.8	18.8	18.9	20.0	32.0
2	2 lbs. Indian corn meal,	Ditto	39.1	37.4	32.2	25.7	33.6	26.1	22.2	20.0	16.6	21.2	33.6
3	2 lbs. bran,	Ditto	40.6	34.8	24.7	22.4	31.2	22.1	16.1	7.9	12.9	15.4	31.2
4	2 lbs. bran and 2 lbs. Indian corn meal,	Ditto	38.3	31 2	31.7	29.9	33.3	19.5	16.3	15.8	18.7	16.6	32.3
		Means,	38.8	35.0	29.6	26.1	32.3	22.3	19.0	15.6	16.8	18 5	32.3
5	None,	Indian corn meal,	33.7	23.3	26.9	10.0	25.1	18.7	15.2	23.8	23.1	20.3	25.1
6	2 lbs. bean and lentil meal	Ditto	40.0	32.1	27.0	20.8	29.5	23.2	20.6	17.0	24.5	21.3	29.5
7	2 lbs. bran,	Ditto	37.9	32.9	30.1	25.2	30.7	19.4	25.5	22.6	20.7	22.1	30.7
8	2 lbs. bran and 2 lbs. bean and lentil meal,	Ditto	41.8	34.8	29.0	24.8	32.1	25.9	21.5	17.5	24.1	22.3	32.1
		Means,	38.3	30.8	28.2	22.4	29.3	22.0	21.0	20.2	23.1	21.5	29.3
9	*2 lbs. bean and lentil meal,	Bran,	26.0	25.2	28.5	20.9	23.3	4.9	18.1	12.8	14.9	11.2	23.3
10	*2 lbs. Indian corn meal,	Do	26.5	29.9	28.1	26.5	27.2	2.2	15.5	13.0	12.1	11.1	27.2
11	2 lbs. bean and lentil meal, and 2 lbs Indian corn meal,	Do	33.7	28.2	24.6	21.8	26.9	18.4	13.8	14.7	17.4	16.1	26.9
		Means,	28.7	27.8	25.4	23.1	25.8	8 2	14.1	13.5	14.8	12.8	25.8
12	None,	Bean and lentil meal, Indian corn meal, and bran,	40.9	34.3	26.9	20.6	30.8	24.3	17.5	12.8	19.2	18.6	30.8
		Mean of 12 Pens,	36.3	31.7	27.9	23.7	29.5	18.8	18.2	16.4	18.6	18	29.5

*Increased to 3 lbs. after the first period of the experiment.

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TABLE XV.

(*Experiments with Pigs.—Series II.*)

Showing the Average Weekly Consumption of Food per 100 lbs. Live Weight of Animal—and also the Increase in Weight obtained by the Consumption of every 100 lbs. of Food, during each of the successive Periods, and the Total Period of the Experiment.

Pen Nos.	Description and Quantities of Limited Food per Pig per Day.	Description of Ad Libitum or Complementary Food.	DIVISION I. Average Weekly Consumption of Fresh Food per 100 lbs. Live Weight of Animal.					DIVISION II. Increase obtained by the Consumption of 100 lbs. Fresh Food.					Average Weekly Consumption of Food per 100 lbs. Live Weight of Animal.
			1st Period, 14 Days.	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.	1st Period, 14 Days.	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.	
1.....	None, ...	Bean and lentil meal,.....	31.2	22.9	23.9	22.7	24.9	19.4	17.5	14.4	21.8	18.4	34.9
2.....	3 lbs barley meal,.....	Ditto,.....	43.0	39.6	36.4	31.8	37.0	18.3	12.8	17.8	16.3	16.3	37.0
3.....	1 lb. bran,.....	Ditto,.....	37.2	34.5	34.6	31.3	34.1	21.1	12.9	17.1	16.6	16.9	34.1
4.....	3 lbs. barley meal and 1 lb. bran,.	Ditto,.....	42.4	33.7	32.9	24.3	33.2	18.4	16.1	18.3	11.7	16.4	33.2
		Means,.....	38.4	32.7	31.6	27.5	32.3	19.3	14.8	16.9	16.6	17.0	32.3
5.....	None, ...	Barley meal,.....	39.3	38.1	34.1	28.7	34.6	17.5	18.5	20.7	14.0	17.7	34.6
6.....	3 lbs. bean and lentil meal,.....	Ditto,.....	40.3	35.2	29.9	17.0	30.9	26.4	13.5	16.1	16.4	18.4	30.9
7.....	1 lb bran,.....	Ditto,.....	42.9	36.6	32.1	26.1	34.3	23.1	15.6	13.5	19.2	17.8	34.3
8.....	3 lbs. bean and lentil meal, and 1 lb. bran,.....	Ditto,.....	40.0	23.5	23.4	20.6	26.8	19.8	13.8	19.8	13.9	17.2	26.8
		Means,.....	40.6	33.3	29.9	23.1	31.6	21.7	15.3	17.5	15.9	17.8	31.6
9.....	None, ...	Mixture of 1 part bran, 2 parts barley meal, and 3 parts bean and lentil meal,.....	41.6	37.4	34.1	22.5	33.1	15.9	18.1	18.4	15.8	17.1	33.1
10.....	None, ...	Duplicate of Pen 9,.....	40.8	38.3	33.7	28.2	35.2	23.7	17.3	14.1	18.6	18.2	35.2
		Means,.....	40.9	37.8	33.9	25.3	34.1	19.8	17.7	16.2	16.9	17.6	34.1
11.....	None, ...	Mixture of one part bran, two parts bean and lentil meal, and 3 parts barley meal,...	42.7	35.4	31.0	26.3	33.6	24.6	17.9	16.4	20.4	19.9	33.6
12.....	None, ...	Duplicate of Pen 11,.....	42.8	33.7	34.2	28.5	34.7	26.7	15.3	17.8	19.6	19.9	34.7
		Means,.....	43.7	34.5	32.6	27.4	34.1	25.6	16.6	17.1	20.0	19.9	34.1
		Means of the 12 Pens,.....	40.3	34.1	31.7	25.7	32.7	21.2	15.8	17.0	17.0	17.8	32.7

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TABLE XVI.

(*Experiments with Pigs.—Series II.*)

Showing the Average Weekly Consumption of Food per 100 lbs. Live Weight of Animal—and also the Increase in Weight obtained by the Consumption of every 100 lbs. of Food, during each of the successive Periods, and during the Total Period of the Experiment.

Pen Nos.	Description and Quantities of Limited Food per Pig per Day.	Description of Ad Libitum or Complementary Food.	DIVISION I. Average Weekly Consumption of Fresh Food per 100 lbs. Live Weight of Animal.					DIVISION II. Increase obtained by the Consumption of 100 lbs. Fresh Food.					Average Weekly Consumption of Food per 100 lbs. Live Weight of Animal.
			1st Period, 14 Days.	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.	1st Period, 14 Days.	2d Period, 14 Days.	3d Period, 14 Days.	4th Period, 14 Days.	Total Period, 8 Weeks.	
1.....	2 lbs. cod fish,.....	Bran & Indian Meal (equal parts,)	28.9	30.3	29.7	26.8	28.6	16.4	21.3	17.2	16.1	17.7	28.6
2.....	2 lbs. cod fish,.....	Indian meal,.....	29.3	27.7	26.0	23.8	26.1	18.9	24.2	23.2	22.0	22.1	26.1
3.....	None,.....	Bran and Indian meal (equal parts,) and cod fish,.....	32.8	33.7	32.1	29.7	32.3	21.7	17.7	12.9	14.1	16.3	32.3
4.....	1 lb. cod fish,.....	Mixture of 2 parts barley meal and 1 part bran,.....	44.7	39.9	33.3	28.8	36.3	19.5	16.1	10.2	21.3	16.7	36.3
5.....	1 lb. cod fish,.....	Barley Meal,.....	55.2	40.0	33.9	27.5	39.6	23.4	18.8	17.8	11.1	18.2	39.6
		Means of the 5 Pens,.....	38.2	34.3	31.0	27.3	32.6	20.0	19.6	16.3	16.9	18.2	32.6

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Looking first to Table XIV., (which refers to Series I.,) it is seen, by the heading, that Division I. gives the quanitity, in lbs. and tenths, of the gross or fresh food *consumed weekly by every* 100 *lbs. live weight of animal* in each pen, during each of the four successive periods, and the total period of the experiment. A glance at the figures in this division from left to right will show, that, with scarcely an exception, there is a very considerable decrease of consumption to 100 lbs. live weight, as the experiment progresses. In several cases there is scarcely half as much food consumed to a given weight of animal in the fourth period as in the first; and, indeed, in all where the progress is known to have been good, this decrease in consumption, from the first period to the fourth, amounts to about one-third or more. On the other hand, it is as clearly seen, that in those cases in which the pigs fattened but very slowly, the decrease in the consumption of food to a given weight of animal, as the experiment proceeded, is very inconsiderable.

Looking at the figures a little more in detail, we observe too, that there is a perceptibly greater decrease in consumption to a given weight of animal, where the comparatively *non*-nitrogenous Indian corn predominated, than where the more highly nitrogenous foods were more freely given.

If we now turn to Division II. of the Table—which shows the comparative *productiveness* of a given weight of food in gross increase, as the experiment progressed—we see no such obvious general gradation in this, as the animal matured, as has been observed in the rate of the *consumption* of food; though there is, perhaps, upon the whole, more of a tendency to decrease than to increase in this rate of productiveness in gross increase, as the experiment proceeded. Comparing, however, the results of pens 1 to 4 inclusive, where the nitrogenous food more predominated, with those of pens 5 to 8, where the Indian

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meal was given in larger quantity, there is certainly, with the more highly nitrogenous diets, more of the tendency to decrease, in the proportion of gain in live weight to food consumed, than with the more *non*-nitrogenous ones.

Turning to Table XV., which gives the same particulars for the Second Series, we see that notwithstanding during the course of the experiment several of the pigs in this Series were unhealthy, and some died, yet the same general facts are here brought out as in Series I. Thus, taking first Division I., (Table XV.,) which shows the rate of *consumption* as the animals fattened, we find (owing doubtless to the generally better and more uniform balance of the constituents of the food throughout this Series than in Series I.,) that the decrease in the consumption of food to 100 lbs. live weight of animal, is even more general in this series than in the former one. And the greater tendency to decrease in consumption of food to a given weight of animal, the more within certain limits the comparatively non-nitrogenous food predominates, is here again seen.

In Division II. (Table XV.) we observe, that the rate of *productiveness* in gross increase in weight to 100 lbs. of food consumed, fluctuates so considerably from the commencement to the conclusion of the experiment, but so irregularly that it is impossible to decide that there is any regular gradation in either direction. There is, indeed, in this case, perhaps more of the tendency to *decrease* in the rate of productiveness of the food in *gross increase* as the experiment proceeded. It is not improbable, however, that the great heat of the weather, and the unhealthiness of some of the pigs, may have had something to do with this result. Though, as we shall have further occasion to observe, a slightly lessened proportion of *gross* increase, to food consumed, does not necessarily show that the food was really less productive in *real dry* increase.

In Division I. of Table XVI., which shows the *rate of*

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consumption, as the experiment proceeded, with the Third or Cód Fish Series, the influence of the composition of the food on this rate of consumption by the fatting animal, is strikingly shown. Thus, in pens 1 and 2, considerably more of the highly nitrogenous cod fish was allotted to the pigs than they would have taken, could they have obtained other food in its stead; but, in pens 4 and 5, only half as much of the cod fish was given, so that the pigs were enabled to take a much larger proportion of the comparatively non-nitrogenous complementary foods. The result is, that with this very much larger proportion of the more *non*-nitrogenous foods in pens 4 and 5, we have in these a very much greater decrease in the rate of consumption to a given weight of animal than in the pens 1 and 2. There was, indeed, as we shall have occasion to notice again further on, a much less proportion of food consumed to a given weight of animal, when the large amount of the highly nitrogenous cod fish was given, than in most other cases in our experiments—and, at the same time a full average productiveness in gross increase of that food. But, confining ourselves just now to the question of the proportion of the food consumed to the weight of the animal as it fattens, we find, looking a little more in detail to the figures in Table XVI., that small as was the decrease in consumption in either pens 1 or 2, yet it was greater in pen 2, where the non-nitrogenous Indian meal alone constituted the complementary food, than where, as in pen 1, it was mixed with a quantity of Bran. We have a similar result, more clearly brought out, in comparing pens 4 and 5; the decrease in the rate of consumption to a given weight of animal as the experiment proceeded, being much greater in pen 5, where Barley meal was given alone as the ad libitum food, than in pen 4, where it was mixed with Bran.

The progressive rate of *productiveness* of a given weight of food in this Third Series (see Table XVI., Division 2)

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is very variable, and does not show anything like regularity of gradation. The increase obtained for a given weight of food during the whole period was, however, generally good in this Series. In pen 2 it was about as high as in any case in the three Series; and we may readily suppose, that the mixture of Codfish and Indian-meal given in this pen 2, would supply more digestible assimilable matter in a given weight of the food, than that in any other pen in the three Series of experiments.

Upon the whole, then, the experiments show very strikingly the rapid *decrease in the rate of consumption of food to a given weight of animal as it fattens.* The fact of such a decrease is, we believe, pretty currently admitted, though we presume that the extent of it will appear from these Tables to be much greater than is generally supposed. At the same time it is seen that although there is this great decrease in the amount of food consumed to a given weight of animal as it matures, yet that the *productiveness* —at least in *gross* increase in live weight—of a given amount of food, is much more nearly constant throughout the fattening process. It has, however, been observed, that there is perhaps a greater tendency to an increased rate of productiveness of the food in gross increase as the animal matures, the greater, within certain limits, the proportion of the more *non*-nitrogenous constituents of the food. At any rate, it is undoubted that it was under these circumstances of a larger proportion of the non-nitrogenous constituents, that the decrease in the rate of *consumption —indicating maturity*—was by far the most rapid. And, in reference to this point it may be interesting here to observe, that it appears from an extensive series of experiments which we have made with a view of determining the probable composition of the *gross* increase in weight of the fattening animal, that the nearer it approaches to maturity the greater will be the proportion of *fat* in the gross increase obtained—and also, that the greater the pro-

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portion of fat, the greater is the proportion in the gross increase of *real dry substance.* It appears, therefore, from the results, that not only is the amount of food required to a given weight of animal the more diminished as it fattens —the more within certain limits the food contains of the *non*-nitrogenous constituents—but likewise, that it is these more *non*-nitrogenous foods that seem to give any indication of an increased rate of productiveness in *real dry increase* as the fattening process proceeds.

It will be observed that in our remarks upon Tables XIV., XV., and XVI., we have almost confined our attention to the question of the *progressive* rate of the consumption, and of the productiveness, of food during the fattening process—and to the influence which the character of the foods—as generally known apart from the evidence of direct chemical analysis—may be supposed to have had on this *progression.* The actual relationship of consumption and of increase to the various constituents of the food, will be more clearly brought out in Tables which will shortly follow. But, before introducing this part of the subject, it will be well to subjoin statements, both of the per centage composition of the foods employed, and of the actual quantities of the various constituents consumed, with the amounts of increase which they have yielded.

In Tables XVII., and XVIII., which now follow, we have a summary statement of the per centage composition of the foods employed in the three Series of experiments.

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Table XVII.

(*Experiments with Pigs.—Series I.–III.*)

Summary of the per centages of *Dry Matter*, *Ash*, *Nitrogen*, and *Fatty Matter*, in the foods employed in the 1st Series of Experiments with Pigs.

DESCRIPTION.	Per Centage Results.							
	Dry Mater.		Ash.		Nitrogen.		Fatty Matter	
	Inclusive of Ash.	Organic only.	In Fresh Substance.	In Dry Matter	In Fresh Substance.	In Dry Matter.	In Fresh Substance.	In Dry Matter.
Egyptian Beans,.....	88.30	83.57	4.73	5.35	4.24	4.80	2.29	2.60
Lentils, Lot 1,.....	87.30	82.43	4.87	5.58	4.52	5.18	2.23	2.55
Lentils, Lot 2,.....	86.62	81.64	4.98	5.75	4.56	5.26	2.21	2.55
Indian Corn Meal, Lot 1,.....	89.70	88.33	1.37	1.53	1.72	1.92	5.10	5.68
Indian Corn Meal, Lot 2,.....	89.89	88.62	1.28	1.42	1.95	2.17	5.59	6.22
Bran,.....	84.79	78.77	6.02	7.10	2.61	3.08	4.92	5.80

Table XVIII.

(*Experiments with Pigs.—Series II.–III.*)

Summary of the per centage Composition of the Foods.

Egyptian Beans,.....	88.17	84.45	3.72	4.22	4.21	4.78	2.20	2.50
Lentils, Lot 1,.....	89.42	86.44	2.98	3.33	4.54	5.08	2.25	2.52
Lentils, Lot 2,.....	89.97	85.10	4.87	5.41	4.18	4.65	1.35	1.50
Barley, Lot 1,.....	82.38	80.19	2.19	2.66	1.82	2.21	2.34	2.84
Barley, Lot 2,.....	80.95	78.77	2.18	2.69	1.83	2.26	2.33	2.88
Barley, Lot 3,.....	82.53	80.48	2.05	2.48	1.55	1.88	1.41	1.71
Bran, ...	85.08	78.67	6.41	7.53	2.62	3.08	4.98	5.85
Dried Newfoundland Codfish,.....	59.26	40.60	18.66	31.49	6.00	11.13	0.90	1.52

The figures in these Tables (XVII. and XVIII.) are in all cases the means of two or more determinations agreeing well with each other. The dry matter is determined by drying in a water-bath at 212°. The ash, by burning on platinum trays, in cast-iron muffles arranged specially for that process. The per centages of ash, as given in the Table, are, however, generally too high, as, to secure a fair sample, the whole bulk of the food was well mixed together; and from this, somewhat large samples were taken in the first instance, from which it was impossible to remove all adventitious matters, and especially so when the samples were taken from the bulk in the state of meal. The nitrogen determinations were made by combustion with soda lime, and estimated as the double platinum salt. The fatty matter is that yielded by extraction with ether.

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It is seen, that the Indian Corn and Barley Meal contained less than 2 per cent. of nitrogen; the Bran about 2¾ per cent.; the Beans and Lentils about 4½ per cent.; and the dried Cod Fish about 6½ per cent.

Of fatty matter, on the other hand, the dried Cod Fish contains less than 1 per cent.; the Beans and Lentils only about 2¼ per cent.; the Barley meal about the same quantity; and the Indian Corn and Bran, each about five per cent.

These Tables of the *per centage* composition of the foods, are employed in the construction of all the Tables which will now follow.

In Tables XIX., XX., and XXI., there are given, for the three Series respectively—the total amount of increase in live weight obtained *in each pen;* also the total amounts consumed—of each of the different foods in the fresh state as weighed out to the pigs—and of the dry organic matter—of the mineral matter—of the nitrogen—and of the fatty matter, which those amounts of fresh food contained; also a summary of the same particulars for several of the pens classed together, as well as for all the pens of each Series respectively.

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TABLE XIX.

(*Experiments with Pigs.—Series I.*)

Showing the Total Amounts of Gross Food or Constituents consumed, and of Increase produced, during the Total Period of the Experiment.

Nos. of Pen.	Total Increase of 3 Pigs during eight Weeks.	Description of the Foods.	Total Fresh Food consumed.	Total Dry Organic Matter consumed.	Total Mineral Matter consumed.	Total Nitrogen consumed.	Total Fatty Matter consumed.
	lbs.		lbs.	lbs.	lbs.	lbs.	lbs.
1.....	303.....	Bean Meal,.....	756	632	35.74	32.06	17.36
		Lentil Meal,.....	756	620	37.34	34.34	16.73
		Total,.....	1512	1252	73.08	66.40	34.09
2.....	336.....	Indian Meal,.....	336	297	4.41	6.26	18.16
		Bean Meal,.....	624	521	29.48	26.44	14.32
		Lentil Meal,.....	624	511	30.80	28.34	13.82
		Total,.....	1584	1329	64.69	61.04	46.30
3.....	200.....	Bran,.....	336	265	20.23	8.77	16.53
		Bean Meal,.....	484	404	22.89	20.50	11.10
		Lentil Meal,.....	484	397	23.82	21.96	10.72
		Total,.....	1304	1066	66.94	51.23	38.35
4.....	252.....	Indian Meal,.....	336	297	4.40	6.25	18.16
		Bran,.....	336	265	20.23	8.77	16.52
		Bean Meal,.....	378	316	17.88	16.04	8.68
		Lentil Meal,.....	378	311	18.63	17.17	8.39
		Total,.....	1428	1189	61.14	48.23	51.75
5.....	221.....	Indian Meal,.....	1086	961	14.33	20.03	58.23
6.....	298.....	Bean Meal,.....	168	140	7.93	7.12	3.85
		Lentil Meal,.....	168	138	8.27	7.61	3.71
		Indian Meal,.....	1065	942	14.06	19.02	57.05
		Total,.....	1401	1220	30.26	34.35	64.61
7.....	309.....	Bran,.....	336	265	20.23	8.77	16.53
		Indian Meal,.....	1063	941	13.94	19.81	57.44
		Total,.....	1399	1206	34.17	28.58	73.97
8.....	347.....	Bran,.....	336	265	20.23	8.77	16.53
		Bean Meal,.....	168	140	7.93	7.12	3.85
		Lentil Meal,.....	168	138	8.27	7.61	3.71
		Indian Meal,.....	884	782	11.56	16.55	47.93
		Total,.....	1556	1325	47.99	40.05	72.02

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Table XIX.

(Experiments with Pigs.—Series I.)—Continued.

Numbers of Pen.	Total Increase of 3 pigs during 8 Weeks.	Description of the Foods.	Total Fresh Food consumed.	Total Dry Organic matter consumed.	Total Mineral matter consumed.	Total Nitrogen consumed.	Total Fatty Matter consumed.
	lbs.		lbs.	lbs.	lbs.	lbs.	lbs.
9.....	100.....	Bean meal,.....	231	193	10.91	9.78	5.30
		Lentil meal,.....	231	189	11.39	10.48	5.10
		Bran,.....	431	339	25.95	11.25	21.19
		Total,.....	893	721	48.25	31.51	31.59
10.	114.....	Indian meal,.....	462	409	6.03	8.66	25.10
		Bran,.....	566	446	34.07	14.77	27.83
		Total,.....	1028	855	40.10	23.43	52.93
11.....	178.....	Bean meal,.....	168	140	7.93	7.12	3.85
		Lentil meal,.....	168	138	8.27	7.61	3.71
		Indian meal, ...	336	297	4.41	6.25	18.16
		Bran,.....	431	339	25.90	11.25	21.19
		Total,.....	1103	914	46.51	32.23	46.91
12.....	256.....	Bean meal,.....	342	286	16.18	14.51	7.85
		Lentil meal,.....	342	282	16.78	15.52	7.60
		Indian meal,.....	616	545	8.07	11.50	33.30
		Bran,.....	71	56	4.27	1.85	3.49
		Total,.....	1371	1169	45.30	43.38	52.24

Summary of Classes of Pens.

Class I. Pens 1–4.	1091....	Bran,.....	672	530	40.46	17.54	33.06
		Indian meal,.....	672	594	8.81	12.51	36.32
		Bean meal,.....	2242	1873	105.99	95.04	51.46
		Lentil meal,.....	2242	1839	110.59	101.81	49.66
		Total, ...	5828	4836	265.85	226.90	170.50
Class II. Pens 5–8.	1175....	Bran, ...	672	530	40.46	17.54	33 06
		Bean meal, ...	336	280	15.86	14 24	7.70
		Lentil meal,.....	336	276	16.54	15.22	7.42
		Indian meal, ...	4098	3626	53.89	76.01	220.65
		Total,.....	5442	4712	126.75	123.01	268.83
Class III. Pens 9–11.	392	Bean meal,.....	399	333	18.84	16.90	9.15
		Lentil meal,.....	399	327	19.66	18.09	8.81
		Indian meal,.....	798	706	10.44	14.91	43.26
		Bran,.....	1428	1124	85.92	37.27	70.21
		Total,.....	3024	2490	134.86	87.17	131.43
All Pens,..	2914.....	Bean meal,.....	3319	2772	156.87	140.69	76.16
		Lentil meal,.....	3319	2724	163.57	150.64	73.49
		Indian meal, ...	6184	5471	81.21	114.93	333.53
		Bran,.....	2843	2240	171.11	74.20	139.82
		Total,.....	15665	13207	572.76	480.46	623.00

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TABLE XX.

(*Experiments with Pigs.—Series II.*)

Showing the Total Amounts of Gross Food or Constituents consumed, and of Increase produced, during the Total Period of the Experiment.

Nos. of Pens.	Total Increase of 3 pigs during 8 Weeks.	Description of the Foods.	Total Fresh Food consumed.	Total Dry Organic matter consumed.	Total mineral matter consumed.	Total Nitrogen consumed.	Total Fatty Matter consumed.
	lbs.		lbs.	lbs.	lbs.	lbs.	lbs.
1	195	Bean meal,	528	446	19.66	22.25	11.64
		Lentil meal,	528	453	20.78	22.80	8.93
		Total,	1056	899	40.44	45.05	20.57
2	284	Bean meal,	619	523	23.07	26.11	13.65
		Lentil meal,	619	530	26.39	26.63	10.17
		Barley meal,	504	400	11.00	9.21	11.76
		Total,	1742	1453	60.46	61.95	35.58
3	242	Bean meal,	633	535	23.59	26.70	13.96
		Lentil meal,	633	542	27.03	27.22	10.36
		Bran,	168	132	10.76	4.40	8.36
		Total	1434	1209	61.38	58.32	32.68
4	240	Bean meal,	397	335	14.78	16.73	8.75
		Lentil meal,	397	340	16.50	17.14	6.71
		Barley meal,	504	400	11.00	9.21	11.76
		Bran,	168	132	10.76	4.40	8.36
		Total,	1466	1207	53.04	47.48	35.58
5	291	Barley meal,	1643	1306	35.64	29.50	35.97
		Total,	1643	1306	35.64	29.50	35.97
6	251	Bean meal,	231	195	8.60	9.73	5.09
		Lentil meal,	231	198	9.47	10.00	3.97
		Barley meal,	907	720	19.80	16.55	21.11
		Total,	1369	1113	37.87	36.28	30.17

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TABLE XX.

(*Experiments with Pigs.—Series II.*)—*Continued.*

Nos. of Pen.	Total Increase of 3 Pigs during eight Weeks.	Description of the Foods.	Total Fresh Food consumed.	Total Dry Organic Matter consumed.	Total Mineral Matter consumed.	Total Nitrogen consumed.	Total Fatty Matter consumed.
	lbs.		lbs.	lbs.	lbs	lbs.	lbs.
7.....	277.....	Barley Meal,.....	1383	1100	29.96	24.77	30.60
		Bran,.....	168	132	10.76	4.40	8.36
		Total,.....	1551	1232	40.72	29.17	38.96
8.....	187.....	Bean Meal,.....	189	160	7.04	7.96	4.16
		Lentil Meal,.....	189	162	7.61	8.20	3.31
		Barley Meal,.....	600	478	13.03	10.82	13.55
		Bran,.....	126	99	8.07	3.30	6.27
		Total,.....	1104	899	35.75	30.28	27.29
9.....	253.....	Bean Meal,.....	369	311	13.73	15.54	8.13
		Lentil Meal,.....	369	317	13.66	16.06	6.55
		Barley Meal,.....	492	391	10.70	8.92	11.28
		Bran,.....	246	193	15.76	6.44	12.24
		Total,.....	1476	1212	53.85	46.96	38.20
10.....	283.....	Bean Meal,.....	389	329	14.50	16.41	8.58
		Lentil Meal,.....	389	233	16.13	6.83	6.61
		Barley Meal,.....	519	413	11.25	9.30	11.49
		Bran,.....	260	204	16.64	6.80	12.92
		Total,.....	1557	1279	58.52	49.34	39.60
11.....	310.....	Bean Meal,.....	260	219	9.68	10 95	5.73
		Lentil Meal,.....	260	222	10.76	11.23	4.41
		Barley Meal,.....	779	619	16.98	14.16	17.93
		Bran,.....	260	204	16.65	6.81	12.93
		Total,.....	1559	1264	54.07	43.15	41.00
12.....	307.....	Bean Meal,.....	257	217	9.56	10.82	5.66
		Lentil Meal,.....	257	220	10.62	11.10	4.36
		Barley Meal,.....	770	613	16.70	13.81	17.11
		Bran,.....	257	202	16.46	6.73	12.78
		Total,.....	1541	1252	53.34	42.46	39.91

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Table XX.

(*Experiments with Pigs.—Series II.*)—*Continued.*

Summary of Classes of Pens.

Nos. of Pen.	Total Increase of 3 Pigs during eight Weeks.	Description of the Foods.	Total Fresh Food consumed.	Total Dry Organic Matter consumed.	Total Mineral Matter consumed.	Total Nitrogen consumed.	Total Fatty Matter consumed.
	lbs.		lbs	lbs.	lbs.	lbs.	lbs.
Class I. Pens 1-4.	961.....	Bean Meal,.....	2177	1839	81.10	91.79	48.00
		Lentil Meal,.....	2177	1865	90.70	93.79	36.17
		Barley Meal,.....	1008	800	22.00	18.42	23.52
		Bran,.....	336	264	21.52	8.80	16.72
		Total,.....	5698	4768	215.32	212.80	124.41
Class II. Pens 5-8.	1006....	Bean Meal,.....	420	355	15.64	17.69	9.25
		Lentil Meal,.....	420	360	17.08	18.20	7.28
		Barley Meal,.....	4533	3604	98.43	81.64	101.23
		Bran,.....	294	231	18.83	7.70	14.63
		Total,.....	5667	4550	149.98	125.23	132.39
Class III. Pens 9-10.	536.....	Bean Meal,.....	758	640	28.23	31.95	16.71
		Lentil Meal,.....	758	650	29.79	32.89	13.16
		Barley Meal,.....	1011	804	21.95	18.22	22.77
		Bran,.....	506	397	32.40	13.24	25.16
		Total,.....	3033	2491	112.37	96.30	77.80
Class IV. Pens 11-12	617.....	Bean Meal,.....	517	436	19.24	21.77	11.39
		Lentil Meal,.....	517	442	21.38	22.33	8.77
		Barley Meal,.....	1549	1232	33.68	27.97	35.04
		Bran,.....	517	406	33.11	13.54	25.71
		Total,.....	3100	2516	107.41	85.61	80.91
All Pens,.	3120.....	Bean Meal,.....	3872	3270	144.21	163.20	85.35
		Lentil Meal,.....	3872	3317	158.95	167.21	65.38
		Barley Meal,.....	8101	6440	176.06	146.25	182.56
		Bran,.....	1653	1298	105.86	43.38	82.22
		Total,.....	17498	14325	585.08	519.94	415.51

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Table XXI.

(*Experiments with Pigs.—Series III.*)

Showing the Total Amounts of Gross Food or Constituents consumed, and of Increase produced, during the Total Period of the Experiment.

Numbers of Pen.	Total Increase of 4 pigs during 8 Weeks.	Description of the Foods.	Total Fresh Food consumed.	Total Dry Organic matter consumed.	Total Mineral matter consumed.	Total Nitrogen consumed.	Total Fatty Matter consumed.
	lbs.		lbs.	lbs.	lbs.	lbs.	lbs.
1.....	323.....	Bran,.....	755	595	45.48	19.73	37.15
		Indian meal,.....	755	669	9.84	14.28	41.25
		Cod fish,.....	308	125	57.50	20.31	2.77
		Total,.....	1818	1389	112.82	54.32	81.17
2.....	389.....	Indian meal,.....	1450	1283	18.99	27.14	78.58
		Cod fish,.....	308	125	57.50	20.31	2.77
		Total,.....	1758	1408	76.49	47.45	81.35
3.....	286.....	Bran,.....	756	595	45.51	19.74	37.18
		Indian meal, ...	756	669	9.79	14.29	41.28
		Cod fish, ...	238	97	44 41	15.70	2.14
		Total,.....	17.50	1361	99.71	49.73	80.60
4.....	301.....	Barley meal, ...	1048	832	22.82	19.02	24.03
		Bran,.....	524	412	33.58	13.73	26.08
		Cod fish, ...	224	91	41.79	14.77	2.02
		Total,.....	1796	1335	98.19	47.52	52.13
5.....	376.....	Barley meal,.....	1841	1551	40.16	33.54	42.60
		Cod fish,.....	224	91	41.79	14.77	2.02
		Total,.....	2065	1642	81.95	48.31	44.62

Summary of Classes of Pens.

Class I. pens 1, 2, and 3.	998.....	Bran,.....	1511	1190	90.99	39.47	74.33
		Indian meal,.....	2961	2621	38.62	55.71	161.11
		Cod fish,.....	854	347	159.41	56.32	7.68
		Total,.....	5326	4158	289.02	151.50	243.12
Class II. Pens 4 & 5.	677.....	Barley meal, ...	2889	2383	62.98	52.56	66.63
		Bran,.....	524	412	33.58	13.73	26.08
		Cod fish, ...	448	182	83.58	29.54	4.04
		Total,.....	3861	2977	180.14	95.83	96.75
All Pens,..	1675.....	Bran,.....	2035	1602	124.57	53.20	100.41
		Indian meal,.....	2961	2621	38.62	55.71	161.11
		Barley meal, ...	2889	2383	62.98	52.56	66.63
		Cod fish,.....	1302	529	242.99	85.86	11.72
		Total,.....	9187	7135	469.16	247.33	339.87

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These Tables of the actual amounts of the increase in live weight produced, and of the fresh food or its constituents consumed, furnish a complete account of the chemical statistics of the experiments, and provide a basis for any further calculations; and it is only as serving these purposes, that we have given them in detail in these Tables. We shall find, indeed, that the influence of the composition of the food, upon its consumption, and its productiveness, will be more clearly brought out in the Tables which next follow (XXII., XXIII., XXIV., XXV., XXVI., and XXVII.,) in which the actual results of Tables XIX., XX., and XXI., are brought by calculation, to a more convenient and uniform standard of comparison.

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TABLE XXII.

(*Experiments with Pigs.—Series I.*)

Division I.—Showing the *Average Weekly Consumption per* 100 lbs. *Live Weight of Animal*—of Fresh Food—of Gross Dry Matter—of Mineral Matter—of Nitrogen—and of Fatty Matter. Results calculated from direct Experimental Determinations. (Quantities stated in lbs., tenths, &c.)

Pen	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Fresh Food consumed.			Gross Dry Matter consumed.			Mineral Matter consumed.			Nitrogen consumed.			Fatty Matter consumed.		
				Limited Food.	Ad Libitum Food.	Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	3	None, ...	Bean and lentil meal,,	....	32.0	32.0	....	28.0	28.0	....	1.54	1.54	....	1.40	1.40	....	0.72	0.72
2	3	Indian meal,.....	Ditto,.....	7.1	26 4	35.5	6.4	22.9	29.3	0.09	1.28	1.37	0.13	1.16	1.29	0.88	0.60	0.98
3	3	Bran, ...	Ditto,.....	8.0	23.2	31.2	6.8	20.3	27.1	0.48	1.12	1.60	0.21	1.01	1.22	0.40	0.52	0.92
4	3	Indian meal and bran,	Ditto,.....	15.2	17.1	32.3	13.2	15.0	28.2	0.56	0.82	1.38	0.34	0.75	1.09	0.78	0.39	1.17
5	3	None,.....	Indian meal,.....	....	25.1	25.1	....	22.5	22.5	....	0.33	0.33	....	0.46	0.46	....	1.34	1.34
6	3	Bean and lentil meal,	Ditto,.....	7.1	22.4	29.5	6 2	20.1	26.3	0.34	0.30	0.64	0.31	0.41	0.72	0.16	1.20	1.36
7	3	Bran, ...	Ditto,.....	7.4	23.3	30.7	6.2	20.9	27.1	0.44	0.31	0.75	0.19	0.43	0.62	0.36	1.16	1.52
8	3	Bean and lentil meal and bran,	Ditto, ...	13.9	18.2	32.1	11.9	16.4	28.3	0.75	0.24	0.99	0.48	0.34	0.82	0.50	1.04	1.54
9	3	Bean and lentil meal,	Bran, ...	12.1	11.3	23.4	10.6	9.5	20.1	0.58	0.68	1.26	0.53	0.29	0.82	0.27	0.55	0.82
10	3	Indian meal,.....	Do	12.2	14.9	27.1	11.0	12.7	23.7	0.16	0.90	1.06	0.23	0.39	0.62	0.66	0.73	1.39
11	3	Bean and lentil meal and Indian meal,.....	Do	16.4	10.5	26.9	14.5	8.9	23.4	0.88	0.63	1.51	0.51	0.27	0.78	0.63	0.54	1.17
12	3	None, ...	Bean and lentil meal, Indian meal & bran, each ad libitum,....	..	30.8	30.8	....	27.2	27.2	....	1.02	1.02	....	0.97	0.97.	....	1.17	1.17
Mean of the 12 Pens,.....				8.3	21.2	29.5	7.2	18.7	25.9	0.36	0.76	1.12	0.24	0.66	0.90	0.34	0.83	1.17

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TABLE XXII.—(CONTINUED.)

(*Experiments with Pigs.—Series I.*)

Division II.—Showing the *Average Weekly Consumption per* 100 lbs. *Live Weight of Animal*—of Dry Organic Matter—of Nitrogenous Substance—of Total *Non*-Nitrogenous Substance—of Nitrogenous Substance not Fat—and of Fatty Matter. Results calculated from Division 1. (Quantities stated in lbs., tenths, &c.)

Pen	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Dry *Organic* Matter consumed.			Nitrogenous Substance consumed.			Total *Non*-Nitrogenous Substance consumed.			*Non*-Nitrogenous Substance (not fat) consumed.			Fatty Matter consumed.		
				In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	3	None,.....	Bean and lentil meal,.	...	26.47	26.47	....	8.84	8.84	....	17.63	17.63	....	16.91	16 91	....	0.72	0.72
2	3	Indian meal,.....	Ditto,.....	6.30	21 65	27.95	0.83	7.30	8.13	5 47	14.35	19.82	5.08	13.75	18.83	0.38	0.60	0.98
3	3	Bran, ...	Ditto,.....	6.34	19.19	25.53	1.32	6.39	7.71	5.01	12.80	17.81	4.62	12.28	16 90	0.40	0 52	0.92
4	3	Indian meal and bran,	Ditto,.....	12.70	14.17	26.87	2.14	4.73	6.87	10.56	9.44	20.00	9.78	9.05	18.83	0.78	0.39	1.17
5	3	None,.....	Indian meal,.....	....	22.18	22.18	....	2.91	2.91	....	19.27	19.27	....	17.92	17.92	....	1.34	1.34
6	3	Bean and lentil meal,	Ditto,.....	5.85	19.84	25.69	1.95	2.60	4.55	3.90	17.23	21.13	3.74	16.03	19.77	0.16	1.20	1.36
7	3	Bran, ...	Ditto,.....	5.81	20.65	26.46	1.21	2.74	3.95	4.60	17.91	22.51	4.24	16.75	20.98	0.36	1.16	1.52
8	3	Bean and lentil meal and bran,	Ditto,.....	11.20	16.15	27.35	3.05	2.15	5.20	8.15	14.00	22.15	7.65	12.96	20.61	0.78	1.04	1.54
9	3	Bean and lentil meal,	Bran, ...	10.00	8.88	18.88	3.34	1.85	5.19	6.66	7.03	13 69	6.39	6.47	12.86	0.27	0.55	0.82
10	3	Indian meal,.....	Do	10.80	11.78	22.58	1.44	2.46	3.90	9.36	9.32	18.68	8.70	8.59	17.29	0.66	0.73	1.39
11	3	Bean and lentil meal and Indian meal,.....	Do	13.66	8.29	21.95	3.23	1.73	4.96	10.44	6.56	17.09	9.81	6.01	15.82	0.63	0.54	1.17
12	3	None, ...	Bean and lentil meal, Indian meal and bran, each ad libitum,.....	....	26.23	26.23	....	6.12	6.12	....	20.10	20.10	....	18.93	18.93	....	1.17	1.17
Means of the 12 Pens,.....				6.89	17.95	24.84	1.54	4.15	5.69	5.35	13.80	19.15	5.00	12.97	17.97	0.34	0.82	1.17

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TABLE XXIII.

(*Experiments with Pigs.—Series II.*)

DIVISION I.—Showing the *Average Weekly Consumption per* 100 *lbs. Live Weight of Animal*—of Fresh Food—of Gross Dry Matter—of Mineral Matter—of Nitrogen—and of Fatty Matter. Results calculated from direct Experimental Determinations. (Quantities stated in lbs., tenths, &c.)

Pen.	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Fresh Food consumed.			Gross Dry Matter consumed.			Mineral Matter consumed.			Nitrogen consumed.			Fatty Matter consumed.		
				Limited Food.	Ad Libitum Food.	Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	3	None,	Bean and Lentil Meal,	....	24.9	24.9	....	22.2	22.2	....	0.95	0.95	....	1.06	1.06	....	0.48	0.48
2	3	Barley Meal,	Ditto,	10.7	26.3	37.0	8.7	23.4	32.1	0.22	1.05	1.27	0.20	1.12	1 32	0.25	0.51	0.76
3	3	Bran,	Ditto,	4.0	30.1	34.1	3.4	26 8	30.2	0.26	1.20	1.46	0.10	1.28	1.38	0.20	0.58	0.78
4	3	Barley Meal & Bran	Ditto,	15.2	18.0	33.2	12.6	16.0	28.6	0.49	0.71	1.20	0.31	0.77	1.08	0.46	0.35	0.81
5	3	None,	Barley Meal,	....	34.6	34.6	....	28.3	28.3	....	0.75	0.75	....	0.62	0.62	....	0.76	0.76
6	3	Bean and Lentil Meal,	Ditto,	10.4	20.5	30.9	9.3	16.7	26.0	0.41	0.45	0.86	0.45	0.37	0.82	0.20	0.48	0.68
7	3	Bran,	Ditto,	3.7	30.6	34.3	3.2	25.0	28.2	0.24	0.66	0.90	0.10	0.55	0.65	0.18	0.68	0.86
8	3	Bean and Lentil meal and bran,	Ditto,	12.3	14.6	26.9	10.8	11.9	22.7	0.55	0.32	0.87	0.47	0.26	0.73	0.33	0.33	0.66
9	3	None,	Mixture of 1 part bran, 2 parts barley meal, and 3 parts bean and lentil meal,	..	33.1	33.1	....	28.4	28.4	....	1.21	1.21	....	1.05	1.05	....	0.86	0.86
10	3	None,	Duplicate of Pen 9,	..	35.2	35.2	....	30.3	30.3	....	1.32	1.32	....	1.12	1.12	....	0.90	0.90
11	3	None,	Mixture of 1 part bran, 2 parts bean and lentil meal, and 3 parts barley meal,	..	33.6	33.6	....	28.4	28.4	....	1.16	1.16	....	0.93	0.93	....	0.88	0.88
12	3	None,	Duplicate of Pen 11,	..	34.7	34.7	....	29.4	29.4	....	1.20	1.20	....	0.95	0.95	....	0.90	0.90
		Mean of the 12 Pens,		4.7	28.0	32.7	4.0	23.9	27.9	0.18	0.91	1.09	0.18	0.84	0.97	0.13	0.64	0.77

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TABLE XXIII.—*Continued.*

(*Experiments with Pigs.—Series II.*)

DIVISION II.—Showing the *Average Weekly Consumption per* 100 *lbs. Live Weight of Animal*—Dry Organic Matter—of Nitrogenous Substance—of Total *Non*-Nitrogenous Substance—of Non-Nitrogenous Substance not Fat—and of Fatty Matter. Results calculated from Division I. (Quantities stated in lbs., tenths, &c.)

Pen.	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Dry *Organic* Matter consumed.			Nitrogenous Substance consumed.			Total *Non* Nitrogenous Substance consumed.			*Non*-Nitrogenous Substance (not Fat) consumed.			Fatty Matter consumed.		
				In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	3	None,	Bean and Lentil Meal,	....	21.21	21.21	....	6.69	6.69	....	14.51	14.51	....	14.03	14.03	....	0.48	0.48
2	3	Barley Meal,	Ditto,	8.51	22.39	30.90	1.23	7.06	8.29	7.28	15.33	22.61	7.03	14.82	21.85	0.25	0.51	0.76
3	3	Bran,	Ditto,	3.14	25.59	28.73	0.66	8.07	8.73	2.48	17.52	20.00	2.28	16.94	19.22	0.20	0.58	0.78
4	3	Barley Meal & Bran,	Ditto,	12.07	15.31	27.38	1.95	4.85	6 80	10.12	10.46	20.58	9.66	10.11	19.17	0.46	0.35	0.81
5	3	None,	Barley Meal,	....	27.51	27.51	....	3.91	3.91	....	23.60	23.60	....	22.84	22.84	....	0.76	0.76
6	3	Bean and Lentil Meal,	Ditto,	8.87	16.26	25.13	2.81	2.36	5.17	6.06	13.91	19.97	5.86	13.43	19.29	0.20	0.48	0.68
7	3	Bran,	Ditto,	2.92	24.36	27.28	0.61	3.45	4.06	2.31	20.90	23.21	2.13	20.22	22.35	0.18	0.68	0.86
8	3	Bean and Lentil meal and bran,	Ditto,	10.23	11.62	21.85	2.98	1.66	4.64	7.25	9.97	17.22	6 92	9.64	16.56	0.33	0.33	0.66
9	3	None,	Mixture of 1 part bran, 2 parts barley-meal, and 3 parts bean and lentil meal,	....	27.24	27.24	....	6.65	6.65	....	20.59	20.59	....	19.73	19.73	....	0.86	0.86
10	3	None,	Duplicate of Pen 9,	....	28.96	28.96	....	7.03	7.03	....	21.92	21.92	....	21.02	21.02	....	0.90	0.90
11	3	None,	Mixture of 1 part bran, 2 parts bean and lentil meal, and 3 parts barley meal,	....	27.26	27.26	....	5.86	5.86	....	21.41	21.41	....	20.53	20.53	....	0.88	0.88
12	3	None,	Duplicate of Pen 11,	....	28.17	28.17	....	6.02	6.02	....	22.15	22.15	....	21.25	21.25	....	0.90	0.90
		Mean of the 12 Pens,		3.31	22.99	26.80	0.89	5.30	6.15	2.96	17.69	20.65	2.82	17.05	19.87	1.13	0.64	0.77

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TABLE XXIV.

(*Experiments with Pigs.—Series III.*)

DIVISION I.—Showing the *Average Weekly Consumption per* 100 lbs. *Live Weight of Animal*—of Fresh Food—of Gross Dry Matter—of Mineral Matter—of Nitrogen—and of Fatty Matter. Results calculated from direct Experimental Determinations. (Quantities stated in lbs., tenths, &c.

Pen	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Fresh Foood consumed.			Gross Dry Matter consumed.			Mineral Matter consumed.			Nitrogen consumed.			Fatty Matter consumed.		
				Limited Food.	Ad Libitum Food	Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	4	Cod fish,.....	Bran and Indian meal (equal parts)	4.8	23.8	28.6	2.9	20.8	23.7	0.91	0.87	1.78	0.32	0.54	0.86	0.04	1.23	1.27
2	4	Ditto,.....	Indian Meal,.....	4.6	21.5	26.1	2.7	19.4	22.1	0.85	0.28	1.13	0.30	0.40	0.70	0.04	1.17	1.21
3	4	None,.....	Cod fish,.....	...	4.4	32.3	...	2.6	27.0	....	0.82	1.84	....	0.29	0.92	....	0.04	1.49
			Bran and Indian meal (equal parts)	...	27.9		...	24.4		....	1.02		....	0.63		....	1.45	
		Means,.....		3.1	25.9	29.0	1.9	22.4	24.3	0.59	0.99	1.58	0.21	0.62	0.83	0.03	1.29	1.32
4	4	Cod fish,.....	Mixture of 2 parts barley-meal, and 1 part bran,.....	4.5	31.7	36.2	2.7	26.2	28.9	0.84	1.14	1.98	0.30	0.66	0.96	0.04	1.01	1.05
5	4	Ditto,.....	Barley-meal,.....	4.3	35.3	39.6	2.5	30.5	33.0	0.80	0.77	1.57	0.28	0.64	0.92	0.04	0.82	0.86
		Means,.....		4.4	33.5	37.9	2.6	28.4	31.0	0.82	0.95	1.77	0.29	0.65	0.94	0.04	0.91	0.95
		Means of the 5 Pens,.....		3.6	29.0	32.6	2.2	24.8	27.0	0.68	0.98	1.66	0.24	0.63	0.87	0.03	1.14	1.17

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TABLE XXIV.—*Continued.*

(*Experiments with Pigs.—Series III.*)

DIVISION II.—Showing the *Average Weekly Consumption per* 100 lbs., *Live Weight of Animal*—of Dry Organic Matter—of Nitrogenous Substance—of Total *Non*-Nitrogenous Substance—of Non-Nitrogenous Substance not Fat—and of Fatty Matter. Results calculated from Division I. (Quantities stated in lbs., tenths, &c.)

Pen	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Dry Organic Matter consumed.			Nitrogenous Substance consumed.			Total *Non*-Nitrogenous Substance consumed.			*Non*-Nitrogenous Substance (not fat) consumed.			Fatty Matter consumed.		
				In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	4	Cod fish,.....	Bran and Indian meal (equal parts)	1.97	19.91	21.88	1.92	3.38	5.30	0.04	16.54	16.58	0.00	15.30	15.30	0.04	1.23	1.27
2	4	Ditto,.....	Indian meal,.....	1.86	19.08	20.94	1.82	2.54	4.36	0.04	16.54	16.58	0.00	15.37	15.37	0.04	1.17	1.21
3	4	None,.....	Cod fish.....	....	1.79	25.18	....	1.75	5.71	....	0.04	19.47	....	0.00	17.97	....	0.04	1.49
			Bran and Indian meal (equal parts)	....	23.39		....	3.96		....	19.43		....	17.97		....	1.45	
		Means,.....		1.28	21.39	22.67	1.25	3.88	5.13	0.03	17.52	17.55	0.00	16.21	16.21	0.03	1.29	1.32
4	4	Cod fish,.....	Mixture of 2 parts barley-meal, and 1 part bran,.....	1.86	25.06	26.92	1.80	4.16	5.95	0.06	20.90	20.96	0.02	19.89	19.91	0.04	1.01	1.05
5	4	Ditto,.....	Barley-meal,.....	1.70	29.73	31.43	1.71	4.05	5.76	0.04	25.68	25.72	0.00	24.86	24.86	0.04	0.82	0.86
		Means,.....		1.78	27.46	29.17	1.75	4.11	5.86	0.05	23.29	23.31	0.00	22.37	22.37	0.04	0.91	0.95
		Means of the 5 Pens,.....		1.48	23.79	25.27	1.45	3.97	5.42	0.04	19.82	19.86	0.04	18.68	18.68	0.03	1.14	1.17

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TABLE XXV.

(*Experiments with Pigs.—Series I.*)

DIVISION I.—Showing the Average Consumption to *produce* 100 lbs. *Increase in Live Weight*—of Fresh Food—of Gross Dry Matter—of Mineral Matter—of Nitrogen—and of Fatty Matter. Results calculated from direct Experimental Determinations. (Quantities stated in lbs., tenths, &c.)

Pen.	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Fresh Food consumed.			Gross Dry Matter consumed.			Mineral Matter consumed.			Nitrogen consumed.			Fatty Matter consumed.		
				Limited Food.	Ad Libitum Food.	Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	3	None, ...	Beans and lentil meal,	...	499	499	..	437	437	....	24.12	24.12	....	21.91	21.91	....	11.25	11.25
2	3	Indian meal,.....	Ditto,.....	100	371	471	90	322	412	1.31	19.93	19.24	1.86	16.28	18.14	5.41	8.37	13.78
3	3	Bran, ...	Ditto,.....	168	484	652	142	424	566	10.09	23.31	33.40	4.38	21.20	25.58	8.26	10.91	19.17
4	3	Indian meal and bran,	Ditto,.....	267	300	567	233	263	496	7.75	14.48	24.23	5.96	13.18	19.14	13.76	6.77	20.53
5	3	None, ...	Indian meal,.....	..	491	491	..	441	441	....	6.48	6.48	....	9.06	9.06	....	26.35	26.35
6	3	Bean and lentil meal,	Ditto,.....	113	357	470	99	321	420	5.44	4.72	10.16	4.94	6.58	11.52	2.54	19.14	21.68
7	3	Bran, ...	Ditto,.....	109	344	453	92	309	401	6.53	4.51	11.04	2.84	6.41	9.25	5.35	17.15	22.50
8	3	Bean and lentil meal and bran,	Ditto,.....	194	255	449	167	229	396	10.48	3.33	13.81	6.77	4.77	11.54	6.94	14.48	21.42
9	3	Bean and lentil meal,	Bran, ...	462	431	893	405	365	770	22.20	25.90	48.10	20.26	11.25	31.51	10.40	21.19	31.59
10	3	Indian meal,.....	Do	405	496	901	364	421	785	5.29	29.90	35.19	7.60	12.96	20.56	2.20	24.41	26.61
11	3	Bean and lentil meal, and Indian meal,.....	Do	377	342	619	335	205	540	20.31	14.55	34.86	11.79	6.32	18.11	14.44	11.90	26.34
12	3	None, ...	Bean and Lentil meal, Indian meal and bran, each ad libitum,.....	...	536	536	...	474	474	....	17.72	17.72	....	16.93	16.93	....	20.40	20.40
		Mean of the 12 Pens, ...		183	400	583	160	351	511	7.62	15.58	23.20	5.53	12.24	17.77	5.77	16.03	21.80

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TABLE XXV.—(CONTINUED.)

(*Experiments with Pigs.—Series I.*)

DIVISION II.—Showing the Average Consumption to *produce* 100 lbs. *Increase in Live Weight*—of Dry Organic Matter—of Nitrogenous Substance—of Total *Non*-Nitrogenous Substance—of Non-Nitrogenous Substance (not Fat)—and of Fatty Matter. Results calculated from Division I. (Quantities stated in lbs., tenths, &c.)

Pen.	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Dry *Organic* Matter consumed.			Nitrogenous Substance consumed.			Total *Non*-Nitrogenous Substance consumed.			*Non*-Nitrogenous Substance (not fat) consumed.			Fatty Matter consumed.		
				In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	3	None,.....	Bean and lentil meal,.	....	413.3	413.3	....	138.0	138.0	....	275.3	275.3	....	264.0	264.0	....	11.25	11.25
2	3	Indian meal,.....	Ditto,.....	88.5	304.1	392.6	11.7	102.6	114.3	76.8	201.5	278.3	71.4	193.2	264.6	5.41	8.37	13.78
3	3	Bran, ...	Ditto,.....	132.3	400.7	533.0	27.6	133.6	161.2	164.7	267.1	271.8	96.5	256.2	252.7	8.26	10.91	19.17
4	3	Indian meal and bran,	Ditto,.....	222.9	248.7	471.6	37.5	83.0	120.5	185.4	165.7	351.1	171.6	158.9	330.5	13.76	6.77	20.53
5	3	None,.....	Indian meal,.....	....	434.8	434.8	....	57.1	57.1	....	377.7	377.7	....	351.4	351.4	....	26.35	26.35
6	3	Bean and lentil meal,	Ditto,.....	93.3	316.2	409.5	31.1	41.4	72.5	62.2	274.7	336.9	59.7	225.6	315.3	2.54	19.14	21.68
7	3	Bran, ...	Ditto,.....	85.6	304.5	390.1	17.9	40.4	58.3	67.7	264.1	331.8	62.4	247.0	309.4	5.35	17.15	22.50
8	3	Bean and lentil meal and bran,	Ditto,.....	156.4	225.5	381.9	42.6	30.0	72.6	113.8	195.4	309.2	166.8	181.0	287.8	6.94	14.48	21.42
9	3	Bean and lentil meal,	Bran, ...	382.4	339.5	721.9	127.6	70.9	198.5	254.8	268.6	523.4	244.4	247.4	491.8	10.40	21.19	31.59
10	3	Indian meal,.....	Do	358.6	391.0	749.6	47.9	81.6	129.5	310.7	309.4	620.1	308.5	274.9	583.4	2.20	21.41	26.61
11	3	Bean and lentil meal and Indian meal,.....	Do	314.5	190.7	505.2	74.3	39.8	114.1	240.2	150.9	391.1	252.8	139.0	381.8	14.44	11.90	26.34
12	3	None, ...	Bean and lentil meal, Indian meal and bran, each ad libitum,.....	....	456.5	456.5	....	106.7	106.7	....	349.8	349.8	....	329.4	329.4	....	20.40	20.40
Means of the 12 Pens,.....				152.9	335.4	488.3	34.8	77.1	111.9	118.0	258.3	376.3	115.5	241.5	356.0	5.77	16.03	21.80

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TABLE XXVI.

(*Experiments with Pigs.—Series II.*)

DIVISION I.—Showing the Average Consumption to *produce* 100 *lbs. Increase in Live Weight*—of Fresh Food—of Gross Dry Matter—of Mineral Matter—of Nitrogen—and of Fatty Matter. Results calculated from direct Experimental Determinations. (Quantities stated in lbs., tenths, &c.)

Pen.	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Fresh Food consumed.			Gross Dry Matter consumed.			Mineral Matter consumed.			Nitrogen consumed.			Fatty Matter consumed.		
				Limited Food.	Ad Libitum Food.	Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	3	None,	Bean and Lentil Meal,	....	544	544	....	484	484	....	20.84	20.84	....	23.22	23.22	....	10.55	10.55
2	3	Barley Meal,	Ditto,	177	436	613	145	388	533	3.87	17.39	21.26	3.24	18.57	21 81	4.14	8.39	12.53
3	3	Bran,	Ditto,	69	523	592	59	466	525	4.45	20.92	25.37	1.82	22.28	24.10	3.45	10.05	13.50
4	3	Barley Meal & Bran	Ditto,	280	331	611	231	294	525	9.07	13.03	22.10	5.67	14.11	19.78	8.38	6.44	14.82
5	3	None,	Barley Meal,	....	565	565	....	461	461	....	12.25	12.25	....	10.14	10 14	....	12.36	12.36
6	3	Bean and Lentil Meal,	Ditto,	184	361	545	164	295	459	7.20	7.89	15.09	7.87	6.59	14.46	3.61	8.41	12.02
7	3	Bran,	Ditto,	61	499	560	52	408	460	3.88	10.82	14.70	1.59	8.94	10.53	3.02	11.05	14.07
8	3	Bean and Lentil meal and bran,	Ditto,	265	316	581	233	258	491	11.96	6.86	18.82	10.24	5.69	15.93	7.35	7.25	14.60
9	3	None,	Mixture of 1 part bran, 2 parts barley meal, and 3 parts bean and lentil meal,	..	583	583	....	501	501	....	21.28	21.28	....	18.56	18.56	....	15.10	15.10
10	3	None,	Duplicate of Pen 9,	..	550	550	....	473	473	....	20.68	20.68	....	17.42	17.42	....	14.00	14.00
11	3	None,	Mixture of 1 part bran, 2 parts bean and lentil meal, and 3 parts barley meal,	..	503	503	....	425	425	....	17.44	17.44	....	13.92	13.92	....	13.22	13.22
12	3	None,	Duplicate of Pen 11,	..	502	502	....	425	425	....	17.37	17.37	....	13.83	13.83	....	13.00	13.00
		Mean of the 12 Pens,		86	476	562	74.	406	480	3.37	15.56	18.93	2.54	14.44	16.98	2.49	10.82	13.31

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TABLE XXVI.—(CONTINUED.)

(*Experiments with Pigs.—Series II.*)

Division II.—Showing the Average Consumption to *produce* 100 lbs. *Increase in Live Weight*—of Dry Organic Matter—of Nitrogenous Substance—of Total *Non*-Nitrogenous Substance—of Nitrogenous Substance not Fat—and of Fatty Matter. Results calculated from Division 1. (Quantities stated in lbs., tenths, &c.)

Pen.	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Dry *Organic* Matter consumed.			Nitrogenous Substance consumed.			Total *Non*-Nitrogenous Substance consumed.			*Non*-Nitrogenous Substance (not Fat) consumed.			Fatty Matter consumed.		
				In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	3	None,	Bean and lentil meal,	....	463.5	463.5	....	146.3	146.3	....	317.2	317.2	....	306.6	306.6	....	10.55	10.55
2	3	Barley-meal,	Ditto,	140 7	370.8	511.5	20.4	117.0	137.4	120.3	253.8	374.1	116.2	245.4	361.6	4.14	8.39	12.53
3	3	Bran,	Ditto,	54.7	445.0	499.7	11.5	140.4	151.9	43 3	304 6	347.9	39.8	294.6	334.4	3 45	10.05	13.50
4	3	Barley meal and bran	Ditto,	221.6	281.3	502.9	35.7	88.9	124.6	185.9	192.4	378 3	177.5	186.0	363.5	8.38	6.44	14.82
5	3	None,	Barley meal,	....	448.8	448.8	....	63.9	63.9	....	348.9	348.9	....	372.5	372 5	....	12.36	12.36
6	3	Bean and lentil meal,	Ditto,	156.5	286.9	443.4	49.6	41.5	91.1	106.9	245.4	352.3	103.3	237.0	340.3	3.61	8.41	12.02
7	3	Bran,	Ditto,	47.7	397.0	444.7	10.0	56.3	66.3	37.7	340.7	378.4	34.7	329.6	364.3	3.02	11.05	14.07
8	3	Bean and lentil meal and bran,	Ditto,	221.4	251.4	472.8	64.5	35.8	100.3	156.9	215.6	372.5	149.6	208.3	357.9	7.35	7.25	14.60
9	3	None,	Mixture of 1 part bran, 2 parts barley meal, and 3 parts bean and lentil meal,	....	479.4	479.4	....	116.9	116.9	....	362.5	362.5	....	347.4	347.4	....	15.10	15.10
10	3	None,	Duplicate of Pen 9,	....	452.2	452 2	....	109.7	109.7	.. .	342.5	342.5	....	348.5	348.5	....	14.00	14.00
11	3	None,	Mixture of 1 part bran, 2 parts bean and lentil meal, and 3 parts barley-meal,	....	408.1	408.1	....	87.7	87.7	....	320.4	320.4	....	307.2	307.2	....	13.22	13.22
12	3	None,	Duplicate of Pen 11,	....	407.7	407.7	....	87.1	87.1	....	320.6	320.6	....	307.6	307.6	....	13.00	13.00
		Mean of the 12 Pens,		70.2	391.0	461.2	16.0	90.9	90.9	54.2	301.7	355.9	51.7	290.9	342.6	2.49	10.82	13.31

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TABLE XXVII.

(*Experiments with Pigs.—Series III.*)

DIVISION I.—Showing the Average Consumption to *produce* 100 lbs. *Increase in Live Weight*—of Fresh Food—of Gross Dry Matter—of Mineral Matter—of Nitrogen—and of Fatty Matter. Results calculated from direct Experimental Determinations. (Quantities stated in lbs., tenths, &c.)

Pen.	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Fresh Food consumed.			Gross Dry Matter consumed.			Mineral Matter consumed.			Nitrogen consumed.			Fatty Matter consumed.		
				Limited Food.	Ad Libitum Food.	Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.
1	4	Cod fish,....	Bran and Indian meal (equal parts)	95	468	563	56	408	464	17.80	17.12	34.92	6.29	10.53	16.82	0.86	24.27	25.13
2	4	Ditto,.....	Indian meal,.....	79	373	452	47	335	382	14.78	4.88	19.66	5.22	6.98	12.20	0.71	20.20	20.91
3	4	None, ...	Cod fish,.....	..	83	612	..	49	511	....	15.53	34.87	....	5.49	17.39	....	9.75	28.18
			Bran and Indian meal (equal parts)	..	529		..	462		....	19.34		....	11.90		....	27.43	
			Means,.....	58	484	542	34	418	452	10.86	18.96	29.82	3.84	11.63	15.47	0.52	24.22	24.74
4	4	Cod fish,.....	Mixture of two parts barley meal, and 1 part bran,.....	74	522	596	44	432	476	13.88	18.74	32.62	4.91	10.88	15.79	0.67	16.65	17.32
5	4	Ditto,.....	Barley meal,.....	59	490	549	35	423	458	11.11	10.68	21.79	3.93	8.92	12.85	0.54	11.83	11.87
			Means,.....	66	506	572	40	427	467	12.49	14.71	27.20	4.42	9.90	14.32	0.60	18.99	14.59
		Means of the 5 Pens,.....		61	493	554	36	422	458	11.51	17.26	28.77	4.07	10.94	15.01	0.56	20.12	20.68

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TABLE XXVII.—*Continued.*

(*Experiments with Pigs.—Series III.*)

DIVISION II.—Showing the *Average Weekly Consumption per* 100 lbs., *Live Weight of Animal*—of Dry Organic Matter—of Nitrogenous Substance—of Total *Non*-Nitrogenous Substance—of Non-Nitrogenous Substance not Fat—and of Fatty Matter. Results calculated from Division I. (Quantities stated in lbs., tenths, &c.)

Pen	Pigs	Description of Limited Food.	Description of Ad Libitum Food.	Dry Organic Matter consumed.			Nitrogenous Substance consumed.			Total *Non*-Nitrogenous Substance consumed.			*Non*-Nitrogenous Substance (not fat) consumed.			Fatty Matter consumed.		
				In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food.	In Total Food.	In Limited Food.	In Ad Libitum Food	In Total Food.
1	4	Cod fish,.....	Bran and Indian meal (equal parts)	38.7	391.4	430.1	37.8	66.3	104.1	0.9	325.1	326.0	0.0	300.8	300.8	0.86	24.27	25.13
2	4	Ditto,.....	Indian meal,.....	32.1	329.9	362.0	31.4	44.0	75.4	0.7	285.9	286.6	0.0	265.7	265.7	0.71	20.20	20.91
3	4	None,.....	Cod fish.....	....	33.8	476.1	....	33.0	108.0	...	0.7	368.0	...	0.0	339.9	....	0.75	28.18
			Bran and Indian meal (equal parts)	....	442.3		....	75.0		...	367.3		...	339.9		....	27.43	
		Means,.....		23.6	399.1	422.7	23.0	72.8	95.8	0.5	326.3	326.8	0.0	302.1	302.1	0.52	24.22	24.74
4	4	Cod fish,.....	Mixture of 2 parts barley-meal, and 1 part bran,.....	30.2	413.4	443.6	29.5	68.5	98.0	0.7	344.9	345.6	0.0	328.2	328.2	0.67	16.65	17.32
5	4	Ditto,.....	Barley-meal,.....	24.2	412.4	436.6	23.6	56.2	79.8	0.6	356.2	356.8	0.0	344.9	344.9	0.54	11.33	11.87
		Means,.....		27.2	412.9	440.1	26.5	62.4	88.9	0.6	350.5	351.1	0.0	336.5	336.5	0.60	13.99	14.59
		Means of the 5 Pens,.....		25.0	404.7	429.7	24.5	68.6	93.1	0.6	336.6	336.6	0.0	315.9	315.9	0.56	20.12	20.68

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In Tables XXII., XXIII., XXIV., XXV., XXVI., and XXVII., we have then, for each Series, the actual facts of Tables XIX., XX., and XXI., reduced by calculation to one uniform standard of comparison. That is to say, we have in Tables XXII., XXIII., and XXIV., for the three Series respectively, the amounts of the fresh food, and of its various constituents, consumed *weekly per* 100 *lbs. live weight of animal* in each pen, instead of, as in the previous ones, the *actual quantity* of food, of its constituents, consumed *per pen during the whole course of the experiment.* And again, we have, in Tables XXV., XXVI, and XXVII., the amounts of the foods, or their constituents, consumed *to produce* 100 *lbs. increase in live weight*, instead of the *actual amounts* consumed, *to produce the actual amount of increase obtained per pen.* We have in previous papers, when adopting these methods of representing the results of feeding experiments, explained the general principle upon which such Tables are calculated, and we shall not therefore repeat those explanations here. We may, however, a little further describe the plan of the Tables as they stand—as well as the materials whence some of their contents have been derived.

It will be seen, that each of the six Tables, whether relating to the amounts of food, &c., consumed weekly per 100 lbs. live weight of animal, or the amounts consumed to produce 100 lbs. gross increase in weight, is divided into two "Divisions." *Division I.*, in every case, gives what may be called the results of direct experiment—that is to say, the amounts of fresh food consumed; or of those constituents which are calculated directly from the quantities of the latter and the Tables of their percentage composition, as determined by actual analysis. The constituents given in this Division I., are—the *Fresh food*, the *Gross dry matter*, the *Mineral matter*, the *Nitrogen*, and the *Fatty matter*. In Division II., we have—the *Dry organic matter*, the *Nitrogenous substance*, the *Total non-nitrogenous*

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substance, the *Non-nitrogenous substance not Fat*, and with these (which, as will be readily understood, are derived by calculation from those in Division I.,) the *Fatty matter* is repeated in this Division, for the convenience of comparison with them. The dry organic matter, is obtained by deducting the mineral matter from the gross dry substance—the nitrogenous substance, by multiplying the nitrogen by 6.3, on the assumption that it existed in the foods as protein compounds—a method which we think sufficiently accurate for our present purpose. The total non-nitrogenous substance, is obtained by deducting the nitrogenous substance from the dry organic matter—and the non-nitrogenous substance not fat, by deducting the fatty matter from the total non-nitrogenous substance.

Before considering the results themselves given in these Tables, it may be as well to say a few words on some of the questions of interest upon which, we think, they are calculated to afford some useful information.

Our readers are aware, that much attention has of late years been paid to the subject of the adaptation of food, according to its composition, to the various exigencies of the animal system. And, it will be admitted, that it is to the experiments and writings of MM. Boussingault, Liebig, and Dumas, that we must attribute, either directly or indirectly, much of the progress that has been made. These writers, as well as many others, whether themselves experimenters, or more systematic writers on the subject of the Chemistry of Food, seem with few exceptions, and with some limitations, to agree on two main points, namely—as to the relationship of the *nitrogenous* constituents of food, with the formation in the animal body of compounds containing nitrogen—and as to the general connection of the non-nitrogenous constituents with respiration and the deposition of animal fat. Founded more or less upon this broad classification of the constituents of food, according to their supposed varied offices in the ani-

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mal economy, a vast number of analyses of foods have of late years been made; and from the results of these analyses, numerous Tables have been constructed, professing to arrange the current articles of diet, both of man and other animals, according to their comparative value as such. In attempting to apply to practice the more generally admitted facts to which we have referred, in the construction of Tables of the comparative values of foods according to their composition, it seems to have been generally assumed, that our current food-stuffs are thus measurable rather by their *flesh-forming* than by their more specially *respiratory* and *fat-forming* capacities. Hence, with some limitations, the percentage of nitrogen has always been taken as the standard of comparison.

Founded on their percentages of nitrogen, M. Boussingault first arranged Tables of the comparative value of different articles of food, chiefly in reference to the dieting of the animals of the farm. And, in reference to the views and experiments of M. Boussingault on this subject, Baron Liebig, at p. 369 of the Third Edition of his Chemical Letters, makes the following observations: "The admirable experiments of Boussingault prove, that the increase in the weight of the body in the fattening or feeding of stock (just as is the case with the supply of milk obtained from milch cows,) is in proportion to the amount of plastic constituents in the daily supply of fodder." In like manner various specimens of flour and of bread have been arranged by Dr. R. D. Thomson; other articles of vegetable diet by Mr. Horsford; and a large series of aliments from the animal kingdom by MM. Schlossberger and Kemp. Dr. Anderson also, in the report of his elaborate investigation, on the Composition of Turnips, grown under different circumstances, and in different localities, has taken their percentage of nitrogen as the measure of their comparative feeding values.

It has been found, however, that the indications of Ta-

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bles of the comparative values of foods, founded upon their percentages of nitrogenous compounds, were frequently discrepant with those which common usage, or direct experiments on feeding, seem to give. These discrepancies have not escaped the attention of some of the authors of the theoretical Tables; but they have attributed them, rather to erroneous interpretations of common practice or experiment, than to any defect in the theoretical method of estimation. It has been admitted on all hands, however, that further direct experiment bearing upon this important question was much needed; and it was the acknowledgment of this necessity, and the fact that the further we proceeded with our own investigations, the more we became convinced that the current views on the subject required some modification—that led us to give a paper, "On the Composition of Food in relation to Respiration and the Feeding of Animals," at the meeting of the British Association held last year at Belfast. That paper is now in print, as a "Report" in the annual volume of the Association. But, as in that medium it will probably come under the notice of few but scientific readers, we have been induced, in compliance with a wish expressed by Mr. Pusey, as the editor of this Journal, to embody in this article, so far as these experiments on Pigs illustrate them, some of the views of that paper, which may be of interest more particularly in their agricultural bearings.

Recurring to the question of the adopted views on the subject of the Chemistry of Food, to which we have called attention, we may observe, that in our paper on Sheep Feeding, in vol. 10, part 1, of this Journal, we ourselves had, to a certain extent, adopted the current opinion that the increase in weight in the fattening animal will bear a pretty direct relationship to the supply in the food of the nitrogenous or plastic elements of nutrition. At that time, however, we observed in our results some marked exceptions to this rule; and we pointed out, that it seemed to

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apply only so long as the nitrogenous supplies in the food did not exceed a somewhat narrow limit, frequently reached in our current fattening food-stuffs—and beyond which, the proportion of increase obtained from a given amount of nitrogenous substance consumed seemed to be considerably diminished. In that paper, we also showed, that the amount of food consumed to a given weight of animal, within a given time, bore in the experiments then brought forward, a much closer relationship to the amounts in the food of the available non-nitrogenous constituents, than to those of the nitrogenous ones. The results of the experiments with Pigs, as given in the six Tables now about to be considered, will be found fully to bear out the same conclusions which those on Sheep seemed to indicate—namely, that as our current fattening food-stuffs go, both the amount consumed by a given weight of animal, within a given time, and that required to produce a given amount of increase, bear a much closer relationship to the amounts in the food, of the available *non*-nitrogenous constituents, than to those of the nitrogenous ones.

Turning now to the Tables themselves (XXII., XXIII., XXIV., XXV., XXVI., and XXVII.,) we shall find, that the columns of total dry organic matter, of nitrogenous substance, and of total non-nitrogenous substance, as given in Division 2 of each of them, will illustrate the points in question. A glance at the total columns for these three classes of constituents, throughout the Tables for the three Series as a whole, will show, that in all comparable cases, there is very much more of uniformity, in the columns of the *total organic matter*, or of the *total non-nitrogenous* substance, than in those of the *nitrogenous* substance—both in Tables XXII., XXIII., and XXIV., which give the amounts consumed *weekly per* 100 *lbs. live weight of animal*, and in Tables XXV., XXVI., and XXVII., which give the amounts consumed *to produce* 100 *lbs. of increase.*

Some of the deviations from this general regularity in

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the amounts of non-nitrogenous, or of total organic substance consumed, clearly show when examined into, that the uniformity would be even more strict, if the amounts, only of the really digestible or available respiratory and fat-forming constituents could have been represented, instead of, as in these Tables, that of the *gross* or *total* organic or non-nitrogenous substance consumed; and this is more particularly the case in those Tables which show the amount consumed to produce a given weight of increase.

Thus, in reading the figures of the Tables, allowance has to be made, both for those of the non-nitrogenous constituents of the food, which would probably become at once effete, and also for the different respiratory and fat-forming *capacities*, so to speak, of those portions of food which are digestible and available for the purposes of the animal economy. For, it will be remembered—that the Bran, which was given in such large quantities in some cases, contains a large quantity of indigestible and innutritious, and consequently effete woody fibre—that it must require as much as from twice to thrice as much of the starchy series of compounds, as of the fatty ones, to afford the same equivalent of respiratory and fat-forming material—and again, that the nitrogenous constituents, if they took any part in these processes, would have also their own special equivalent or capacity, in these respects. Further, it should be borne in mind, that even after all due allowance has been made for those various sources of discrepancy in the actual figures of the Tables to which we have referred, the amounts which we may suppose to be thus corrected, would still include all those variations—whether arising from differences of external circumstances—from individual peculiarities in the animals themselves—from the different amounts stored up as increase according to the adaptation of the foods—or from the many other uncontrollable circumstances which must always interfere with

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any attempt to bring within the range of accurate numerical measurement, the results of those processes, in which the subtle principle of animal life exerts its influence.

Bearing then those points in mind, which must tend to modify the indications of the actual figures in the Tables, it will appear, we think, that the coincidences in the amounts of available respiratory and fat-forming constituents, consumed by a given weight of animal within a given time, or to produce a given amount of gross increase, are much more strikingly shown throughout the numerous results represented in these Tables, than *a priori* we could have expected to find them. With this general uniformity, however, as to the amounts of non-nitrogenous substance, consumed under given circumstances, or to produce a given result, those of the nitrogenous constituents are found to vary in the proportion of from *one* to *two*, or even *three*; very much more indeed, than is consistent with the idea that the supply of these had regulated either the amounts of food consumed, or of increase produced. There may, indeed, be some individual discrepancy in the figures, not easily accounted for by any of the circumstances to which we have referred; and which might perhaps appear to lead to opposite conclusions to those which we would draw from the Tables as a whole. But we think it will be much more reasonable to attempt to explain—or, considering the nature of the subject even to admit as inexplicable—a few discrepant cases, than to reject, on their account, the general testimony of much more numerous, consistent, and otherwise sufficiently conclusive results.

Looking first to Table XXII., which gives the amounts consumed *weekly per* 100 *lbs. live weight in Series I.*, we find that there is a generally less amount of the *non*-nitrogenous constituents consumed in the first set of four pens than in the second. This somewhat less amount of non-nitrogenous constituents consumed per 100 lbs. live weight per week in the first set, is, however, more than compensated

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by the amount of nitrogenous matter consumed; and there is, with this larger amount of nitrogenous matter in the food, upon the whole a somewhat larger amount of total organic substance consumed in the first set of four pens than in the second. If we now look down these columns, either of total dry organic matter, or of non-nitrogenous substance, and exclude, as we may, pens 9, 10, and 11, (in which there was given the excessive amounts of bran, and the foods could not be considered as of fattening quality,) we cannot fail to see, a very close uniformity in the amounts consumed of both these classes of constituents throughout the nine pens. Thus, taking first the non-nitrogenous substance, the range throughout these nine comparable pens is between the two extremes of 17½ and 22½ lbs. Again, in the column of total organic substance, the range in these nine pens is from 22 lbs. to nearly 28 lbs.; but among eight of them, it is only from 24¼ lbs. to not quite 28 lbs. The column of nitrogenous substance, on the other hand, shows a range in the amount of weekly consumption per 100 lbs. live weight of animal, in these nine pens, of from 2.9 lbs. in pen 5, to 8.8 lbs. in pen 1. The range of difference, therefore, in the amounts of nitrogenous substance consumed, instead of being, as with the other two constituents, in the highest only about 25 per cent. above the lowest, is more than 200 per cent.

Turning now to Table XXIII., which gives the same particulars for the Second Series of experiments, owing to the generally better balance of the constituents of the foods throughout this Series, we need not exclude any of the 12 pens from our comparison. Looking first at the column of total *non*-nitrogenous substance, (see Division 2,) we find the range of weekly consumption per 100 lbs. live weight of animal, to be from 14½ lbs. to 23½ lbs. This is, it is true, a considerably greater range in the amounts of non-nitrogenous matter consumed, than in the pens we compared in Series I. If, however, we were to exclude pens 1 and

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8 from the comparison in this Second Series, we should find, that the amounts of non-nitrogenous matter consumed in the remaining ten pens range only from 19.9 lbs., or say 20 lbs. to 23½ lbs.; and again, the range in the amounts of the total organic substance, consumed in these ten pens, is only from about 25 lbs. to 31 lbs. The difference in the amounts of nitrogenous matter consumed, however, is from 3.9 lbs. to 8.7 lbs—the highest being, therefore, more than 120 per cent. above the lowest.

Comparing the Second Series with the First, the amounts of non-nitrogenous substance consumed weekly per 100 lbs. live weight, are more uniform throughout the former than the latter. They are, however, rather higher in the Second Series with the Barley meal, than in the first with the Indian corn. But, if we refer to the columns of fatty matter for the two Series respectively, we see that there is always a somewhat larger amount consumed of this substance, with its high respiratory and fat-forming capacity, in the food of the First Series, than in that of the Second; and the due allowance for this would in several cases make the differences in the amounts of non-nitrogenous matter consumed in the two Series, even somewhat more inconsiderable.

In the Third Series, (see Division 2, Table XXIV.,) we have the range in the non-nitrogenous matter consumed, from about 16½ lbs. to about 25½ lbs.; and in the total dry organic substance, from about 21 lbs. to about 31½ lbs. On the other hand, in this Series, with the highly nitrogenous Cod Fish, we have, in the amounts of nitrogenous matter consumed, a very small range throughout these five pens compared with that in the other Series—it being only from 4.3 lbs. to 5.9 lbs. We shall see presently, however, that although there was in this Third Series, a less range in the amounts of nitrogenous substance consumed weekly per 100 lbs. live weight, than in those either of the pure non-nitrogenous, or of the total organic

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constituents—yet there was, in the amounts consumed *to produce a given weight of increase* in this Series, a wider range in the column of nitrogenous than in that of the other constituents.

Throughout these experiments, then—in which the animals were allowed to fix for themselves the limit of their consumption, according to the composition of the foods within their reach—we have, as shown in the Tables XXII., XXIII., and XXIV., a very striking coincidence in the amounts of pure non-nitrogenous, or of total dry organic matter, consumed weekly for 100 lbs. live weight of animal; and, with the slight exception in Series 3, a very much greater diversity in the amount of the *nitrogenous* constituents so consumed. There are, indeed, some exceptions to the regularity in the amounts of non-nitrogenous, and of gross organic substance consumed; most of which are found, however, on examination, to prove no exceptions to the conclusion—that, other things being equal, it was the respiratory and fat-forming exigencies of the animals, and not the supplies of the nitrogenous substances in the food, that regulated the amounts of it consumed. Thus, in Series I., we have in pens 9, 10 and 11, a generally less amount of non-nitrogenous and total organic substance, but especially of the latter, consumed to a given weight of animal, than in the other pens. But, the difference in the amounts of these substances available for the purposes of the animal economy, in these pens as compared with the rest, is in fact much greater than the figures in the Table seem to indicate; for, it will be remembered, that in these a very large proportion of the food was Bran, containing a very large per centage of bulky and innutritious woody fibre, which appears to have put a limit to consumption, scarcely beyond the point required for the mere maintenance of the respiratory process; and, in these three pens, the animals gave scarcely half as much increase for a given amount of grass food

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consumed as the average of the Series. Hence, as is obvious, the amounts consumed weekly per 100 lbs. live weight, as given in the Table, include but a small amount devoted to the purposes of increase; and represent, therefore, besides that which was only innutritious woody fibre, little more than was demanded by the respiratory requirements of the animal. There was, it is true, in pen 5, a comparatively small amount of total organic matter consumed per 100 lbs. of live weight; but a reference to the columns of nitrogenous and non-nitrogenous substances respectively, will show that the deficiency in this case was rather in that of the amount of the nitrogenous, than of the non-nitrogenous constituents. It must be remembered, too, that the food in this pen 5, which was Indian meal exclusively, would possess a higher respiratory and fat-forming capacity, than that in any other pen in the Series—and, unlike pens 9, 10 and 11, a very small amount of innutritious woody fibre. Still, the amount of non-nitrogenous substance consumed weekly per 100 lbs. live weight, was comparatively small in this pen; but we shall presently find that notwithstanding this comparatively small amount of the non-nitrogenous matter consumed to a given weight of animal within a given time, and also that we had in this pen three well fattened pigs—yet, in fact, *in proportion to the amount of increase produced*, the amount of non-nitrogenous matter consumed, was as large here as in any case in the Series. In pens 1 and 3 again, we have a somewhat low amount of non-nitrogenous substance consumed, considering that there was in both pens a good rate of increase. In both these pens, however, the amounts of nitrogenous substance consumed were very high; and, owing to this, the amounts of total organic matter consumed are also somewhat high. It would appear, therefore, that in these cases, the somewhat small amounts of non-nitrogenous substance consumed were compensated by the larger amounts of nitrogenous substance.

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Part of the larger amounts of the non-nitrogenous substances taken in the other pens, would seem therefore to have been substituted, in these cases, by the nitrogenous substances.

In Series II. there are very few notable exceptions to the rule of regularity in the amounts of non-nitrogenous, or total organic matter, consumed by a given weight of animal within a given time. There is, however, certainly one such exception; which, indeed, might seem to lead to very opposite conclusions to those which we have formed from the experiments as a whole. Thus, in Pen 1 of Series II., with Beans and Lentils as the only food—which contained a larger proportion of the nitrogenous constituents than any of the other dietaries of the Series—we have little more than two-thirds as much of non-nitrogenous substance, and only four-fifths as much total dry organic matter consumed as the average of the Series. In this pen, however, a larger amount of dry organic substance was consumed *to produce a given amount of gross increase*, than in many of the pens in the Series where the proportion it contained of nitrogenous substance was very much less. And, when we further consider, that with an excessive proportion of nitrogenous substance in the food of the fattening pig, we have found there was more of a tendency to grow in frame and flesh than in other cases—and again, that the larger the proportion of flesh in the increase, the less will be the proportion in it of real dry substance—it will be seen, that if there were a smaller amount of food consumed, there would also, at the same time, be a smaller amount of increase produced by it—especially of that formed from the non-nitrogenous constituents of the food, and which would contain the largest proportion of real dry substance. Hence there would be, though a small amount of non-nitrogenous constituents consumed, a larger proportion of them available for the respiratory process. This apparent exception, is not then necessarily adverse to the

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view that the respiratory process was the gauge of consumption.

In Series III. again, where we have, in Pens 1 and 2, a comparatively small amount of non-nitrogenous matter consumed, the food consisted, in a large proportion, of the highly nitrogenous Cod fish; and in both of these cases, we had not only a very good proportion of increase to food consumed; but the pigs in these pens were very fat and well ripened; and hence, a large proportion of their increase would be real dry substance. It is then, again when the proportion of nitrogenous constituents in the food was large, that a small amount both of non-nitrogenous substance and of gross dry organic matter, seemed to have sufficed for the wants of the animal. This result is in itself interesting; and it may perhaps point to a comparatively greater efficiency in the already animalized protein compounds supplied in the Cod fish, than in those derived, as in the other cases, from the purely vegetable diets. Whether or not there may be any truth in such an explanation of the great efficiency of this highly nitrogenous food, we presume that this result with the unusual, or at least only very locally adopted food, of *fish*, can scarcely be taken as contradicting the indications of the natural requirements of the fattening pig, such as we have found them to be so consistently brought out, in so large a series of experiments, in which he was fed upon his more usual and appropriate food.

Reviewing then, as a whole, the results of these Three Series of experiments with Pigs, and carefully considering the bearing of the various circumstances which must influence our reading of the actual figures of the Tables relating to them—we think it cannot be doubted, that here, as we have already shown in the case of our Sheep experiments, the evidence is very clear, that it is the *non*-nitrogenous rather than the *nitrogenous* constituents of the

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foods, that have been the guage of, or fixed the limit to—*consumption.*

We now come to the question of the relationship respectively, of the nitrogenous and of the non-nitrogenous constituents of the food, to the amount of *increase in live weight* obtained in the fattening Pig. This point is illustrated in Tables XXV., XXVI., and XXVII., which give the amounts of fresh food, or of its various constituents, which were consumed to *produce* 100 *lbs. increase in live weight of animal.* In considering these Tables, we must of course, as before, read the indications of the actual figures, as modified by the obviously different *capacities* for the purposes of the animal economy, of the substances the amounts of which they in each case represent. We must remember too, that as in the Tables showing the relationship of *consumption* to *respiration*, the figures included also the amounts which served to increase the weight of the animal—so now in these Tables professing to show the relationship of the *increase* to the *constituents consumed*, the figures at the same time include the amounts which have been expended in the respiratory process. And further, we should recall to mind the fact, that even the increase itself, will represent different amounts of total dry or of *non*-nitrogenous substance, expended to produce it, according to the amounts respectively, of fat or of flesh, which it may contain.

If we cast the eye down the columns of non-nitrogenous substance consumed, and more particularly those of the total organic matter, in these Tables, (see Division 2, Tables XXV., XXVI., and XXVII., we see, with but few exceptions, a very strikingly close coincidence in the amounts of these, required *to produce* 100 *lbs. gross increase* throughout these three Series of experiments with Pigs. Some of the exceptions, such as those where a large quantity of Bran was used, are at once explained by a consideration of the more obvious qualities of that food;

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and some of the minor differences, by that of the different respiratory and fat-forming capacities of those portions of the foods which would be digestible and available for the purposes of the animal economy. Turning now to the adjoining columns in these Tables, those of the *nitrogenous* substance consumed to produce a given weight of increase throughout these three Series, we find the amount of it as strikingly various as that of non-nitrogenous matter had been otherwise; and certainly, in no way consistent with the view, that the increase of the fattening animal bears any direct relationship to the supplies in its food of the nitrogenous or plastic constituents.

Taking the results of each Series separately;—we may first call attention to Table XXV., which refers to the first Series of 12 pens. If we again exclude pens 9, 10, and 11 from the comparison—and certainly the foods in those pens could not be called fattening foods—we see, that amongst the other nine, the amounts of non-nitrogenous substance consumed to produce 100 lbs. increase in live weight, ranged from 275½ lbs. to 377½ lbs.; and that in seven of the pens the range was only from 309 lbs. to 377½ lbs. In pens 1 and 2, where the food contained so large a proportion of nitrogenous substance, we see that the amounts of non-nitrogenous substance consumed to produce a given amount of increase, was indeed comparatively very small. But, if we look to the column of *total* dry organic matter, we shall find that the amount of this required to produce a given amount of increase was greater in these two pens than in several cases in the Series where the food contained little more than half as much nitrogenous substance. The large proportion of nitrogenous substance in the foods of pens 1 and 2, would seem therefore, not to have really economized material in the production of gross increase—but only to have *substituted* an even somewhat smaller amount of non-nitrogenous constituents in that process; whilst, as we have said, there is reason to

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believe, that a given amount of increase obtained from the more non-nitrogenous diets, contains more fat, and with this a larger proportion of real dry substance.

Again, if we look down the column of total dry organic substance consumed to produce a given amount of increase, we find, that the range for the nine pens is from 382 lbs. in pen 8, to 533 lbs. in pen 3; but of this comparatively large amount of total organic substance consumed in pen 3, to produce 100 lbs. of increase, a larger proportion was nitrogenous substance than in any other case of the nine pens. In this pen too, with this very large amount of *nitrogenous* substance, consumed *to produce a given amount of increase,* there was indeed the minimum amount in the Series of *non*-nitrogenous substance, consumed *weekly per* 100 *lbs. live weight.* Hence, it would seem that the pigs had been pushed to the consumption of a larger amount of nitrogenous substance than they required, or could turn to any useful account, in order to secure a sufficiency of the *non*-nitrogenous substances, which existed in the food in such comparatively small proportion.

Again, in the pen in which there was the next largest amount of total organic substance, consumed to produce a given amount of increase, namely, pen 4, the food contained both Bran and a very large proportion of the highly nitrogenous Bean and Lentil meal. There is, indeed, throughout this Series, scarcely an instance of deviation from the regularity in the amounts of non-nitrogenous or dry organic substance, consumed to produce a given amount of increase, which is not so accounted for by the character of the food, or by the known progress of the animals, as consistently to indicate a very close relationship between the available *non*-nitrogenous constituents of the food and the increase of the so-called "*fattening*" animal. In the column of the amounts of *nitrogenous* constituents, consumed to produce a given weight of increase, we have, however, no indication whatever of any direct nu-

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merical relationship of the one to the other. In one of the pens which we have excluded from our calculation—since the food in it could not be considered of good fattening quality—there was indeed three and a half times as much nitrogenous substance, consumed to prodnce a given amount of increase, as in one or two of the other pens. But excluding as before, pens 9, 10, and 11, from the estimate, we even then find, that the range in the amounts of nitrogenous substance, consumed to produce 100 lbs. of increase, is from 57 lbs., as in pen 5, or 58¼ lbs., as in pen 7, to 138 lbs., as in pen 1, and even to 161 lbs., as in pen 3. We have, then, among the nine pens with fattening foods, a variation in the quantities of nitrogenous substance, consumed to produce a given amount of increase, in the proportion of from 1 to nearly 3.

In the First Series then, taking the nine pens, we have even in the actual figures of the Table, (XXV.,) a very much closer relationship between the increase produced, and the amounts consumed—of non-nitrogenous, or total organic—than of nitrogenous substance. Whilst, as we have pointed out, the variations in the amounts of the non-nitrogenous substance consumed are generally such as to show even more clearly, that, beyond a narrow limit of nitrogenous supply, the proportion of increase obtained to a given quantity of this consumed, is in a very rapidly decreasing ratio. There is evidence, however, in the results that probably in one or two cases in the Series, the nitrogenous supply in the food was at the minimum, if not even somewhat below the amount best adapted as the food of the fattening pig.

Looking to the same points in Series II., (Table XXVI.,) we see, that there is a very much closer relationship in the amounts of non-nitrogenous or total dry organic substance consumed to produce a given amount of increase, than in Series I.; and there is at the same time, a variation in the amounts of nitrogenous substance consumed, but little less

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than in the nine pens of the former Series. Thus, among the whole twelve pens, with their as many different dietaries, the range in the amounts of the non-nitrogenous matter, consumed to produce 100 lbs. of gross increase, is only from 317 lbs. to 385 lbs.; and, that of the total organic substance, from 408 lbs. to 511 lbs.; but, that of the nitrogenous substance, is from 64 lbs. to 152 lbs. In the non-nitrogenous, or total organic substance, required to produce a given amount of increase, the range of variation in the highest amount is, therefore, only about 25 per cent. above the lowest; but in the amounts of the nitrogenous substance, the range of the highest above the lowest is nearly 140 per cent. Looking to the figures a little more closely, we see, that in the second set of four pens in this Second Series, where the amount of nitrogenous substance in the food was on the average only about half as much as in the first set of four pens, there was at the same time, on the average, a little more non-nitrogenous substance, consumed to produce a given result. In these four pens of the second set, however—with their comparatively low amount of nitrogenous substance—we have an average of about 50 lbs. *less* of total dry organic matter, consumed to produce 100 lbs. of increase, than in the pens 1 to 4, where it consisted in so much larger a proportion of nitrogenous substance. Nor, will any one practically acquainted with pig feeding, doubt that the pigs in pens 5 to 8, where the food consisted in such very large proportion of Barley meal, would progress more favorably as to the quality of their increase, or, that they would contain a larger proportion of fat, and, consequently, more of dry substance, than those upon the chiefly Bean and Lentil dietaries of pens 1 to 4. The coincidence, too, in the amount of total dry organic matter, consumed to produce 100 lbs. of increase, in the four pens where the Barley meal, with its low supply of nitrogenous substance predominated, is very striking; and especially in three of

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them, it being in these respectively 449 lbs., 443½ lbs. and 444¾ lbs.; and, it was in these three pens, that the supply of nitrogenous substance was about the lowest in the Series. Again, in three of the pens in the first set of four, with the nitrogenous substance generally double that of the three last alluded to, we have also nearly as close a coincidence in the amounts of total dry substance consumed; though, as we have before noticed, it was here about 50 lbs. more than in the former. Thus, the amounts consumed to produce 100 lbs. of increase in the three pens with the highly nitrogenous food, are respectively 511½ lbs., 499¾ lbs., and 503 lbs.; instead of, as in the three former, only about 345 lbs.

The fact, that a generally larger amount of total dry organic matter, is required to produce a given amount of increase, the more beyond a certain narrow limit, this organic substance abounds in nitrogenous compounds, is again seen, on comparing the pens 9 and 10 of this Second Series, with pens 11 and 12. In pens 11 and 12, we have a larger proportion of Barley meal, and less of Beans and Lentils, and therefore, less of nitrogenous substance consumed, than in pens 9 and 10; and with this larger proportion of nitrogenous substance in the food of pens 9 and 10, we have from 50 lbs. to 70 lbs. more of gross dry organic substance required to produce 100 lbs. of increase, than in the former. In pens 9 and 10, the food was the same in both cases. But the amounts of total organic substance consumed to produce 100 lbs. of increase, vary in the two from 452 lbs. to 479. In pens 11 and 12, again, the foods were also duplicates. They contained, as we have said, less nitrogenous substance than those of pens 9 and 10; and we have in them, the lowest amounts of total organic substance, consumed to produce a given amount of increase, of any in the Series; nor is there in these two cases, a variation of half a pound in the amount of total organic substance consumed to produce 100 lbs. of

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increase; it being in pen 11, 408.1 lbs., and in pen 12, 407.7 lbs.

Notwithstanding, however, the very clear indications which this Second Series affords, of the much closer connection between the amount of increase produced, and that of the non-nitrogenous or total organic substance of the food, than that of the nitrogenous constituents, it must not be overlooked, that it was in pen 1, where the proportion of nitrogenous substance in the food, was higher than in any other pen, that we have even a slightly less amount of *non*-nitrogenous substance, consumed to produce a given amount of increase, than in any other case in the Series. The amount of *total organic substance*, consumed for the same result in this pen 1, was, however, somewhat greater than the average of the twelve pens, and greater also than in six of the individual pens, in several of which the amount of nitrogenous substance was only about half as great as in this pen 1. It would seem, therefore, that this large proportion of nitrogenous substance in the food of pen 1, had yielded a comparatively low rate of gross increase; whilst this increase, the result of the highly nitrogenous diet, would probably consist in a less proportion of solid fat, and, therefore, in a less proportion also, of real dry substance.

The results of Series II., then, very clearly show the very close connection between the amount of increase produced and the supply in the food of the non-nitrogenous constituents, or of total organic substance—independently of its nitrogen, when this exceeds a somewhat narrow limit; and again, as in Series I., that the amount of *nitrogenous* substance, on the other hand, consumed to produce a given amount of gross increase, may vary very greatly, the range being, in fact, in this Series II., in the proportion of from 1 to nearly 2½.

Turning now to a consideration of the same particulars for the Third Series, as given in Table XXVII.—it will

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be remembered that the food in this Series contained a large amount of the highly nitrogenous Cod Fish; and also, that in this Series there was, in the *weekly consumption by a given weight of animal*, a less range from the minimum, of either class of constituents, but especially of the nitrogenous ones, than in either of the other Series. In this Table XXVII., too, showing the amounts of constituents consumed in this Series, *to produce a given amount of* increase, we have also a less range in both classes of constituents than in the Series I. and II. Still, even here, the range in the amounts of nitrogenous substance, consumed to produce a given amount of increase is somewhat greater than that of either of the pure non-nitrogenous, or the total organic substance. The smallest amounts, both of *non*-nitrogenous and of total organic substance, consumed to produce a given amount of increase, in this Series, are in pen 2; in which the amounts of the *nitrogenous* substance also was the least. And again, the *largest* amount of non-nitrogenous, or of total organic substance required, were in pen 3, where there was, at the same time, the largest supply of the nitrogenous substances. The smallest amount of total dry organic substance required to produce a given amount of increase, *throughout the three Series* indeed, was in the pen 2 of this Third Series; and it was here that the food contained a less proportion of indigestible effete matter, than in any other pen in the three Series, whilst at the same time it had a higher respiratory and fat forming capacity, and a large proportion of previously animalized protein compounds. With the exception of this pen 2, in which the food was of such concentrated flesh-forming, fat-forming, and respiratory capacity, the amounts of non-nitrogenous, and of total organic substance, consumed to produce a given amount of increase throughout the Third Series, agree very closely; and the amounts in this Series also correspond very closely with those in the Series I. and II. Whilst, however, in the four pens

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of Series III., now compared together, the amounts of non-nitrogenous, or of total organic substance, consumed to produce a given result, vary only about 10 per cent. in the highest above the lowest—those of the nitrogenous substance in the same pens, varied about 30 per cent.

Upon the whole, then, although the results of this Series, with the unusual food of Cod Fish, show less strikingly than those of the former ones, the closer connection of the non-nitrogenous, than of the nitrogenous constituents consumed, with the amount of gross increase produced—yet still, so far as they go, they are consistent in their indications.

Reviewing, as a whole, the results of the Three Series of experiments with Pigs—if we consider that it is the results obtained under the subtle agency of animal life, that we are seeking to measure and express in figures—and if we also bear in mind the various sources of modification to which our actual figures must be submitted, in order to attain their true indications, we think it cannot be doubted that beyond a limit below which few of our current fattening Pig foods are found to go, it is rather their supplies of available *non*-nitrogenous constituents, than those of their nitrogenous ones, that measure, both the *amount consumed to a given weight of animal within a given time*, and *the increase in weight obtained.* This result with Pigs is too perfectly consistent with that obtained in our experiments with Sheep.

It will be noticed, that wherever the amount of nitrogenous constituents consumed, either by a given weight of the animal within a given time, or to produce a given amount of gross increase, was in these pig-feeding experiments comparatively large, it was where a large proportion of the Leguminous seeds was employed. Some writers who have taken the percentage of the nitrogenous compounds of food, as the measure of its feeding value, have recognized, and endeavored to explain in various

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ways the fact that the records of feeding experiments do not award to the Leguminous seeds a feeding value in proportion to their richness in these compounds; and they have supposed that it is the accepted deductions from the practical feeding experiments, and not the theoretical conclusions, that are in error. Thus it has been objected against the teachings of such experiments—that the variations in the composition of foods of ostensibly the same description used in different cases, has not been determined; that the test has been the *gross* increase or loss in weight; that the increase may be only *fat* formed from starch, &c.; that loss in weight, if any, may be the result of activity, and not of defective diet; that the food in the different cases compared, has been employed in different states, that is, coarse or fine, raw or cooked; that the animals have been variously circumstanced as to temperature, exposure and activity; that individual animals have very various tendencies to increase, and so on. Now we believe that not one of all these objections can vitiate the comparisons which we have made; unless, indeed, in some degree, the one which refers to the difficulty of determining whether the *gross* increase obtained be composed chiefly of *fat* formed from the starch and oily series of compounds, or whether of *flesh* from the nitrogenous ones. We believe, indeed, from direct experiments which we have made, that, in fact, the composition of our domestic animals generally—but especially that of the gross increase of the so-called "*fattening*" animals—consists of a much larger proportion of fat, and a much less one of nitrogenous compounds, than is usually supposed. The whole question of *Animal Composition*, however, as illustrated by the experiments referred to, we hope to treat of separately, on some other occasion. But, apart from the considerations involved in the question of the varying composition of the Increase, or from the fact that our own feeding experiments (which, so far as we are aware, are

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the largest comparable series bearing upon the point,) afford testimony in the same direction, we think, that there is evidence of another kind, of the general correctness and truth of the indications of practical experiments which have thus been objected to. Thus, the comparative prices of the Leguminous seeds and the Cereal grains, may be taken as some condemnation of the measurement of their comparative feeding value, according to their percentage of nitrogenous constituents. In matters of this kind, indeed, especially when staple and generally-used articles of food are concerned, the *market* is one of our shrewdest judges.

While speaking of the comparative feeding values of the Leguminous seeds and the Cereal grains, we may here casually allude to some other points of much interest bearing upon this question, and which are suggested by a consideration of the general results of our feeding experiments, taken in connection with those on the manuring and growth of our Leguminous and Graminaceous corn and fodder crops.

As a general rule it may be said, that weight for weight, the Leguminous seeds contain about twice as much of nitrogenous compounds as the Cereal grains. We have elsewhere stated that, speaking generally, an acre of land, under equal circumstances of soil and season, will frequently yield twice or thrice as much nitrogenous constituents in a Leguminous crop, as in a Cereal grain; and again, that in the latter, an *increase* of produce is not obtained by the use of nitrogenous manures, except at the cost of more nitrogen so supplied in manure, than is contained in the increase thus produced. How is it, we would ask, if this be the case, and if really foods are valuable, at least for the fattening of stock, in proportion to their richness in nitrogenous constituents—how is it, we would ask, if this be the case, that, according to the usual state of the market, we could obtain for a given sum about twice

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as much nitrogenous substance in the Leguminous seeds as in the Cereal grains?—or how is it, on the other hand, that the Leguminous crop does not, much more than is in fact the case, supercede the Cereal grain in the field, the feeding-shed, or even on the table? We have, it is true, much yet to learn, of those minor differences of composition, to which are due the greater or less adaptation to the instinctive wants of the system, of the various constituents of which our staple articles of food are made up. But we think that in no considerations of this kind could we seek an adequate solution of our question. On the other hand, we believe, that in the Leguminous seeds the due proportion of the nitrogenous to the non-nitrogenous constituents is not observed. If this be true, it is obvious that in the use of the Leguminous seeds instead of the Cereal grains, more than is requisite of the nitrogenous constituents will be taken into the system, before the adequate supply be attained, of the *non*-nitrogenous or respiratory and fat-forming materials. Nor, as our markets go, would the relative prices of these seeds and grains be found to interfere with a somewhat lavish use and expenditure of nitrogenous compounds in the former.

In the facts which are here briefly stated, we have surely very curious and interesting matter for reflection; and we have brought to our view a striking instance of the mutual adaptations which are everywhere traceable in the practicable application of natural laws. Thus, we have said, that under given circumstances, the Leguminous crop will give a much larger acreage yield of nitrogen than the Cereal grain; and that an increase of produce of the latter is not obtained by the use of nitrogenous manures, except at the cost of more nitrogen in the manure than is contained in such increased produce; whilst, in point of fact, in the ordinary practice of rotation in this country, the growth of a Leguminous corn or fodder crop, with its high percentage and actual amount of

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nitrogen, is itself frequently either the direct or indirect source of the nitrogenous manure by which the increased Cereal is obtained. And, again, this Cereal, obtained at the *cost* of, but with its lessened *produce* of—nitrogen, is found in practice to be, weight for weight, of equal, or of a more highly feeding value, than the more highly nitrogenized Leguminous product, which perhaps has been expended to produce it. It would thus appear that the demands of the respiratory function, which have been seen more than any other to regulate the consumption of food, would, in point of fact, not be satisfied in the use of the Leguminous diet, unless by a consumption or expenditure of an amount of nitrogen beyond that which the due balance of the constituents of food would seem to require; whilst, on the other hand, in the use of the Cereal grain, its better proportion of the *non*-nitrogenous to the nitrogenous constituents, has only been attained by the sacrifice of nitrogen expended in its growth. It would seem, then, that whether we would seek our supplies of food in the direct use of the highly nitrogenous products, or in the better balanced diet of the Cereals—in either case the end is attained, only at the cost or expenditure of nitrogen; in the one case, by the consumption of a larger amount of it in the food, than the due balance of its constituents would seem to require; whilst in the other this due balance has not been attained without the loss of nitrogen during growth. The claims of health and natural instinct generally leave little doubt which alternative should be adopted, at least in the case of human food. It becomes us, therefore, to investigate and understand the practical bearings of these curious and interesting facts; for, upon the principles they involve, depend much for their success, those fundamental practices of the farm—the feeding of our stock for their double produce of meat and manure, and the adaptation of our rotations.

Apart from considerations of a more general and extend-

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ed bearing, we may conclude our observations with a few words on the more direct application of the results of our xeperiments to the practice of Pig-feeding.

It has been seen that the larger the proportion of nitrogenous compounds in the food, the greater was the tendency to increase in frame and flesh; but that the *maturity* or *ripening* of the animal—in fact, its "*fattening*"—depended very much more on the amount in the food, of certain digestible non-nitrogenous constituents. It also appears, however, when the price at which the more highly nitrogenous pig foods could be purchased, is taken into account, that a given amount of gross increase could be obtained, at a less cost with some of the highly nitrogenous foods, than with the more expensive ones, which have an undoubted character of superiority as pork producers. Were we, indeed, merely to take into consideration the amount of *gross* increase obtained for a given amount of food, of a given money value, there is no doubt, that in addition to the roots, or wash, or other matters, which generally form a greater or less proportion of the food of the pig, it would be the most advantageous, to rely almost exclusively to the end of the fattening process, upon the highly nitrogenous foods, dried fish, or animal refuse, and the Leguminous seeds, beans, lentils, and the like; for, in their use, not only could a given amount of gross increase be obtained at a less cost, than by the use of the Cereal grains, but the manure—the value of which must never be lost sight of in calculating the economy of the feeding process—would be much richer in nitrogen than if the latter were employed.

Unfortunately, however, it is not only a large amount of *gross increase* that secures to the farmer a good profit upon his styes. When pigs are fed freely upon highly succulent food, such as cooked roots, the refuse of starch-works, and the like, they are frequently found to give a very rapid increase. But pork so fed, is found to sink rapidly

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in the salting process, and to waste considerably when boiled. And, although the first batch of pigs so fed may fetch a good price, their character is at once detected, and the market closed against a second sale. On the other hand, when pigs are fattened upon the highly nitrogenized Leguminous seeds—peas being, however, if not an exception, at any rate much less objectionable than some others—the lean is said to be very hard, and the fat also to waste in cooking. And again, when fish, flesh, and some strong flavored oleaginous matters are given, the pork is found to be rank in flavor, or otherwise disagreeably tainted. Common practice, indeed, has settled, that the Cereal grains with their low percentage of nitrogenous compounds, constitute in the long run the staple food of the fattening pig; and the whole of the results of the experiments detailed in this paper bear testimony in favor of the correctness of this decision. Considering, however, not only the price at which a given weight of Leguminous seeds can be purchased, compared with that of the Cereal grains, but also the increased value of the manure from the former, and their probably greater tendency to give increase in frame and flesh—it is obviously the interest of the farmer, to use the highly nitrogenous Leguminous seeds, and perhaps even refuse flesh and other such matters, if at command, during the earlier and more growing stages. But it is certain, that if a constant good market for the pork is to be secured, these must greatly diminish, or cease entirely, and the supply of barley-meal, or other Cereal grain, be substituted for them as the period of fattening proceeds.

But not only do the principles involved in these suggestions apply to the fattening of pigs, but, *mutatis mutandis*, they are applicable also to the fattening of other animals for the butcher; though—since in the case of fattening oxen and sheep the Leguminous seeds, or other highly nitrogenous foods, constitute but a small proportion of the

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total food consumed—any deleterious influence which an excess of them might have upon the quality of the flesh, is less likely to occur. Indeed, all our feeding results consistently show that the theory which assigns to the different substances used as fattening foods, a value in proportion to their percentage of nitrogenous compounds, is fallacious. It is probably a consideration of the obviously vast importance of the functions exercised by the nitrogenous structures and fluids of the animal body, which has given rise, in the scientific mind, to the notion of the relatively higher value of foods according to their richness in nitrogenous constituents. The economical or commercial estimate is, however, founded upon very different principles; and simply takes cognizance of the relations of supply and demand. Thus, air, water, and other natural agents, from their vast importance in sustaining animal and vegetable life, have a high value in a physiological or scientific point of view; but, from the relations of supply and demand, they are of little accounted money value. And so it is with the nitrogenous compounds of food; the functions which they alone can fulfill in the animal body are of the utmost importance; but in relation to the demand for them, it would seem, that our current food stuffs are much more likely to be deficient in certain other elements. Indeed, it would be difficult adequately to account for the comparatively high commercial value of the foods which contain a comparatively large proportion of certain *non*-nitrogenous compounds, except by supposing, that these, compared with the nitrogenous ones, were in less abundance in relation to the demands of the animal system for them.

It is not indeed, only in our current *fattening foods*, that the amount of certain elaborated and digestible non-nitrogenous constituents, rather than that of the nitrogenous ones, chiefly determines their relative value; for, a careful consideration of many human dietaries has led us to simi-

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lar conclusions. When we remember too, that in using sugar, we do so at the cost of the rejection of all the nitrogenous compounds of the sugar cane—and, in addition, of heavy money charges—it would seem improbable that it would become an article of diet of such growing necessity in all ranks of society, if our own home produced foods were chiefly deficient in the nitrogenous constituents. Again, in the much higher price of butter than cheese, and of those cheeses which contain a large proportion of butter than those which are richer in nitrogen, it would seem to be further illustrated, that the demands of the body in relation to the supplies within its reach, are measured more by the amounts in the food, of the non-nitrogenous, than of the nitrogenous constituents. It would perhaps not be difficult to trace the undue estimates which, from scientific considerations merely, have been made as to the relative value of nitrogen and of mineral substances in manures, to a source somewhat similar to that which has given to the nitrogenous compounds of food, such a high theoretical value. For, as it is the mutual relationship of supply and demand of the nitrogenous and non-nitrogenous constituents of food, which must chiefly determine their relative values—so it is the relationship of supply and demand of the nitrogenous and mineral constituents of manures, that must give to them also their respective comparative values.

In conclusion, whilst we must not be understood, as in any way depreciating the value of a somewhat liberal supply of the nitrogenous constituents of food, we would at the same time repeat, that by the concurrent testimony of all our feeding experiments, we are led to believe, that on the prevailing views, too high a relative importance is attributed to them. We have thought, therefore, that it would conduce to further progress in this most important field of inquiry, if the current opinions on the subject were somewhat modified. So general indeed has been

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the adoption, both on the Continent and in this country, of opinions on this subject, for which we have been unable to discern a sufficient basis of facts, and which at the same time, seem to be at variance with the indications of direct experiment, that we suppose little apology will be needed, for entering at the length we have done, into questions, which—involving as they do, the very fundamental principles of scientific feeding—appeared to us, to be some of the most interesting and important lessons which our experiments were calculated to teach.

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REPORTS

OF

COUNTY AND LOCAL

Agricultural and Horticultural Societies

IN MICHIGAN,

FOR THE YEAR 1858.

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REPORTS

OF

COUNTY AGRICULTURAL SOCIETIES,

FOR THE YEAR 1858.

ALLEGAN COUNTY.

No report has been received from this County.

BARRY COUNTY.

No report has been received from this County.

BERRIEN COUNTY.

There is a good and efficient Society organized in this County, but no report has been received for this year.

BRANCH COUNTY.

There is in this County a well organized Society which has permanent grounds at Coldwater. No report of its proceedings has been received from this County.

CALHOUN COUNTY.

A very active Society has been organized in this county, with permanent grounds at Marshall. No report of its proceedings for 1858 has been received. A Horticultural

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Society has also been organized at Battle Creek, which is in active operation.

CASS COUNTY.

No report has been received from this County.

CLINTON COUNTY.

The Annual Meeting of the Clinton County Agricultural and Horticultural Society was held pursuant to public notice, at the American Hotel, in the village of St. Johns, on Wednesday, the 6th day of January, 1858.

The President of the Society, S. P. Marvin, Esq., took the Chair and called the meeting to order.

On motion of Henry Post,

Resolved, That a committee of three persons be appointed to investigate the financial affairs of the Society; and H. Post, H. Alexander and G. Conn were appointed said committee.

Resolved, That Article 4 of the Constitution be amended by striking out the words "Executive Committee," and inserting the words "Board of Directors."

Resolved, That the Constitution be so amended that it shall be the duty of the Board of Directors to fill by appointment any vacancy which may occur in the office of Treasurer, Corresponding or Recording Secretary.

The above amendments to the Constitution were adopted by a two-thirds vote of the members present.

Resolved, That the By-Laws be so amended that no premium shall be paid to any person who was one of the Judges that awarded the same.

Resolved, That the two offices of Corresponding and Recording Secretary be united in one office.

The following persons were then elected officers of this Society for the ensuing year, viz:

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President—W. J. Bancroft;

Recording and Corresponding Secretary—J. C. Brunson;

Treasurer—C. A. Lamb;

Members of the Board of Directors—Isaac T. Hollister, Victor; Gardner Conn, Bingham; William T. Plowman, Westphalia; Henry Post, Victor; Harrison Sutton, Bengall.

The Society then adjourned *sine die.*

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At a meeting of the Board of Directors of the Clinton County Agricultural and Horticultural Society, held pursuant to notice, at the Clinton House, in the village of St. Johns, on Friday, the 12th day of March, A. D. 1858, present, Wm. J. Bancroft, President; J. C. Brunson, Secretary; J. T. Hollister, G. Conn, H. Post, and H. Sutton.

Resolved, That the Society will hold the Sixth Annual Fair on Wednesday and Thursday, the 13th and 14th days of October next.

Resolved, That the Society will hold the Sixth Annual Fair at one of the following places, viz: in the villages of St. Johns or De Witt, in said County, and at the one of those places which will, on or before the 20th day of July next, voluntarily contribute to said Society, the greatest amount of money for the use of said Society, to be expended for its benefit by the Board of Directors, and which amount, so contributed, shall be paid to the Treasurer of said Society on or before the 25th day of September next.

Resolved, That the Secretary of said Society be authorized to advertise for sealed proposals to be received by him on or before the 20th day of July next, for the purpose of carrying the above resolution into effect.

Resolved, That in case no bids are received from the inhabitants of St. Johns or De Witt, or if the bids are equal, the Fair shall be held at St. Johns.

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Resolved, That Hon. D. W. C. Leach be invited to deliver the next Annual Address before the Society.

Resolved, That the Secretary fill the vacancy in case the above invitation is not accepted.

Resolved, That the Secretary record all of the proceedings of last year, that have been neglected by Secretary Hammond.

Resolved, That a Premium List, with the annexed Rules and Regulations, be adopted for this year.

RULES AND REGULATIONS.

RULE 1. Any person may become a member of this Society by the payment of one dollar to the Treasurer, for one year.

Rule 2. No premium shall be awarded to any but members of the Society, including his wife, and his or her family under 21 years of age.

Rule 3. No animal can take more than one premium at the same exhibition.

Rule 4. Premiums will be awarded when there appears merit, although there should be but one claimant, and shall in all cases be withheld altogether when there does not appear sufficient merit.

Rule 5. No person shall receive a premium for a crop unless he comply with the requirements as to statement of cultivation, and time of seeding, and verified by affidavit.

Rule 6. No person shall be on a committee for awarding premiums in any Class in which he is a competitor.

Rule 7. Any person who shall obtain a premium by false pretences, the offences having been proved by sufficient testimony, shall be expelled from the Society.

Rule 8. All competitors for premiums on Horses, Cattle, Sheep, Swine and Poultry, must give notice to the Secretary of their intentions before 12 o'clock M. of the first day of the Fair, and all other articles by 10 o'clock A. M. of the second day.

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Rule 9. The several Committees of Judges in Classes No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 and 14, must report themselves to the Board of Directors at the Secretary's office at 1 o'clock P. M. of the first day of the Fair, and in all other Classes by 10 o'clock A. M. of the second day of the Fair, and will then proceed to their respective duties.

Rule 10. All persons who compete for Field Crops must bring in the statement required of them at the Winter meeting of the Society on the first Wednesday of January, 1859, at which time the premiums on those crops will be awarded.

Rule 11. The Annual Address will be delivered by some friend of Agriculture, at 2 o'clock P. M. of the second day, immediately after which the premiums will be declared.

Rule 12. Cards will be furnished with the number as entered at the Secretary's Office. Exhibitors will be careful to place these cards upon or near the articles or animals so that Judges will have no difficulty in finding them.

Rule 13. All premiums shall become due as soon after the Fair as the Board of Directors are able to make their report, and will be paid by the Treasurer. But the Board of Directors reserve the right, that if there should not be funds enough to pay the whole expenses, to pay a certain percentage, so that the Society will not be in debt at the close of the year.

Rule 14. Tickets will be for sale at the Treasurer's Office admitting one person to the show ground for twelve cents.

Rule 15. The Judges must make their reports to the Secretary, at his office, on or before 12 o'clock M. of the last day of the Fair, without fail.

Rule 16. No animal shall take a premium but twice while owned by the same person.

By order of the Board of Directors.

J. C. BRUNSON, *Secretary.*

Dated St. Johns, March 12, 1858.

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The Board of Directors met at the Clinton House in St. Johns, at one o'clock, September 24, 1858, for the purpose of making arrangements for the County Fair, William J. Bancroft, President, in the Chair. Messrs. Hollister, Post, Conn, Sutton, and Brunson, members of the Board, were present.

On motion,

Resolved, That inasmuch as no proposals have been received from the citizens of St. Johns or De Witt, as a consideration for holding the Fair of the Society at one of these places, the Fair shall be held at St. Johns, according to a resolution passed at the last meeting of the Board of Directors.

Resolved, That G. Conn, H. Sutton and Geo. W. Emens be appointed a Committee of Arrangements, to be done at the expense of the citizens of St. Johns.

On motion, Wilson Curtis was appointed Marshal for the two days of the Fair.

On motion, it was resolved that no moneys shall be paid out without an order of the Secretary, countersigned by the President.

Adjourned.

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ANNUAL FAIR.

The Sixth Annual Fair was held in the village of St. Johns, on the 13th and 14th days of October, 1858. The Fair was the next thing to a failure, this year, for several reasons.

1st. It was very rainy during both days of the Fair, and the roads were almost impassible. It was mud and rain, and rain and mud.

2d. There is a good deal of rivalry between the two villages of St. Johns and De Witt; and when the Fair is at St. Johns, the inhabitants of the south part of the County do not attend the Fair, and vice versa.

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3d. The business of the Society went rather loosely last year; the money spent freely, and the Society run into debt. A good many did not get their premium money till this year, and were not willing to try it again.

4th. The hard times.

The exhibition of Cattle and Horses was good, I think it would equal our previous Fairs, and showed a decided improvement in blood stock.

The number of entries was but little less than last year.

The Annual Address was delivered by Prof. L. R. Fisk, of the Agricultural College, at 2 o'clock P. M. of the second day. The Professor's Address was an able production, and if the farmers of Clinton county will follow his advice, I think it will profit them much.

After the delivery of the Address, the reports of the Judges were then read, and the following premiums awarded:

HORSES.

CLASS I.

Blood Horses.

Best stallion over 4 years old, Gardner Conn,.....	$5 00
Best 3 year old stallion colt, John Voorhies,.....	3 00
2d best do., Wm. Van Dyke,.....	2 00
Best 2 year old colt, G. Conn,.....	2 00

Judges—M. D. Tabor, Orange Whitlock, Benj. Merikew.

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CLASS II.

Horses for All Work.

Best stallion 4 years old, M. J. Whitaker,.....	$4 00
2d best do., L. L. Lane,.....	3 00
Best stallion 3 years old, Lucena Eldrige,.....	3 00
2d best do., R. S. Van Scoy,.....	2 00
Best brood mare 3 yrs. old and upwards, L. L. Lane,	3 00

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2d best do., John Voorhies,..... $2 00
Best colt 1 year old, N. A. Doty,..... 2 00
2d best do., L. Swagart,..... 1 00
Best colt under 1 year, Wm. H. Norris,..... 1 00

The Judges remark that they are well pleased with the exhibition.

Judges—C. S. Wolcott, Edward Jones, C. Scott.

CLASS III.

Matched and Single Horses.

Best pair matched horses 4 years old, E. Ingersoll, $4 00
2d best do., Marcus Annis,..... 3 00
Best pair matched horses 3 yrs. old, J. W. Gardner, 3 00
Best colt 3 years old, mare or gelding, M. Annis,.. 2 00
2d best do., M. J. Whitaker,..... 1 00

Judges—Same as Class second.

CATTLE.

CLASS IV.

Durhams.

Best bull 3 years old and over, Lyman Swagart,... $3 00
" bull 1 year old, Lyman Swagart,..... 2 00
" bull calf, Lyman Swagart,..... 1 50
" cow, Lyman Swagart,..... 3 00
" heifer 2 years old, Lyman Swagart,..... 2 00
" heifer 1 year old, C. S. Wolcott,..... 1 50

Judges—A. B. Bloomer, I. T. Hollister, Wm. J. Bancroft.

CLASS V.

Devons.

Best bull 3 years old and over, D. G. Wilsey,..... $3 00
2d best do., John Avery,..... 2 00

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Best bull 1 year old, H. Alexander,..... $2 00
2d best cow, John Avery,..... 2 00

Judges—Same as Class 4.

CLASS VI.

Native and Grade Cattle.

Best bull 2 years old and over, Harry Huych,..... $3 00
2d best do., H. W. Hale,..... 1 50
Best bull 1 year old, J. R. Hale,..... 1 50
" bull calf, J. R. Hale,..... 1 00
2d best do., John Avery,..... 50
Best cow 3 years old or over, Herman Sprague,.... 2 00
2d best do., H. W. Hale,..... 1 50
Best heifer 2 years old, Lyman Swagart,..... 1 00
2d best do., John Avery,..... 75
Best heifer calf, H. W. Hale,..... 75

Judges—Wm. Brunson, S. W. Hale, E. Daniels.

CLASS VII.

Working Oxen.

Best yoke of working oxen 4 years old or over, N. A. Doty,..... $4 00
2d best do., Edward Jones,..... 2 00
2d best yoke of steers 3 years old, N. T. Fenner,.. 2 00
Best yoke of steers 2 years old, George Rolf,..... 2 00
" yoke of steers 1 year old, J. R. Hale,..... 1 00

Judges—Same as Class 6.

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SHEEP.

CLASS VIII.

Spanish Full Blood and High Grade.

Best buck 1 year old or over, N. R. Low,	$2 00
2d best do., H. Gage,	1 00
Best pen of 5 ewes, N. R. Low,	2 00

Judges—John W. Gardner, B. H. Beers, R. S. Van Scoy.

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CLASS IX.

French Full Blood and High Grade.

Best buck 1 year old or over, H. W. Gale,	$2 00
Best pen 5 ewes, "	2 00

Judges—Same as Class 8.

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CLASS XII.

Swine.

Best boar, H. Gage,	$2 00
2d best, "	1 50
Best breeding sow, H. Gage,	2 00
Best litter of pigs, not less than six in number, nor less than 4 nor more than 9 months old, H. Gage,	2 00

Judges—Moses Tabor, Abram Teneycke, Horace Skinner.

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CLASS XIII.

Poultry.

Best pair Bramah Poutras, Wm. H. Norris,	$0 50
Best pair ducks, "	50

Judges—S. Bottom, D. C. Tucker, John Sly.

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CLASS XIV.

Boys' Department.

Best and handiest yoke of steers 2 years old, G. Rolf,	$1	00
" " " 1 " S. H. Lamb,	1	00
Best yoke of 1 year old steers, C. A. Lamb,.....		75

Judges—Anthony Swarthout, Charles Hudson, Jas. Conn.

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CLASS XVI.

Grain.

Best ½ bushel of winter wheat, I. T. Hollister,.....	$1	00
2d best do., George Rolf, ...		50
Best ½ bushel oats, J. C. Brunson, ...		50
Best sample of yellow corn in the braid, Geo. Rolf,.		50
" white " " W. Van Dyke,		50
" dent " " George Rolf,.		50
" brown " " W. Van Dyke,		50
" white beans, Wm. Van Dyke,.....		50

Judges—J. W. Hungerford, Charles Sessions, Edw. Post.

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CLASS XVII.

Vegetables.

Best and greatest variety of potatoes, G. Rolf,....	$1	00
" 3 ruta bagas, J. C. Brunson,.....		50
" 3 blood beets, G. Rolf,.....		50
" 3 parsnips, Wm. J. Bancroft,.....		50
" carrots, H. C. Hodge, ...		50
" and greatest variety of beans, G. Rolf, ...		50
" 3 heads of cabbage, W. J. Bancroft,.....		50
" 3 squashes, "		50
" 3 pumpkins, G. Rolf, ...		50
" 3 citrons, W. J. Bancroft,.....		50
" 3 watermelons, "		50

Judges—J. R. Hale, Moses Barto, Septa Bottom.

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CLASS XVIII.

Fruit.

Best and greatest variety of winter apples, C. A. Lamb,.....	$1 00
2d best do., J. C. Brunson,.....	50
Best and greatest variety of fall apples, C. A. Lamb,	50
Best and greatest variety of pears, I. T. Hollister,.	1 00
2d best " " " "	50
Best dish of grapes, I. T. Hollister,.....	1 00
2d best " "	50

Judges—C. Henman, Wm. J. Bancroft, James Upton.

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CLASS XIX.

Farm Implements.

Best farm wagon, Morris Primrose,.....	$2 00
Best collection of plows, Wm. Van Dyke,.....	2 00
Best ox yoke, J. R. Hale,.....	50

Judges—John Sly, A. B. Bloomer, John Vance.

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CLASS XX.

Cabinet Work.

Best bureau, J. W. Hungerford,.....	$1 50
" stand, "	50
" sofa, "	1 00

Judges—Charles Henman, L. D. Choss, Thos. Jameison.

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CLASS XXI.

Blacksmithing.

No entries.

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CLASS XXII.

Shoemaking.

Best lot of shoemaking, Charles Henman,.....	$1 00
" pair of fine boots, Charles Henman,.....	50
" pair of ladies gaiters, Charles Henman,.....	1 00

Judges—Thomas Luck, Hosey Hudson, John Hicks.

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CLASS XXIII.

Tailoring.

No entry.

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CLASS XXIV.

Miscellaneous Articles.

Best pork barrel, Septa Bottom,.....	$0 50
" barrel of flour, Daniels & Co.,.....	1 00
2d best do., Daniels & Co.,.....	50
Best butter firkin, Septa Bottom,.....	50
Discretionary—1 meat cask, Septa Bottom,.....	25

Judges—H. Alexander, H. S. Gibons, J. B. Bacon.

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CLASS XXV.

Butter, Cheese, Honey, Sugar and Bread.

Best jar of June or July butter, Mrs. J. C. Brunson,	$1 50
2d best do., Mrs. W. J. Bancroft,.....	75
Best jar of fall butter, Mrs. W. J. Bancroft,.....	1 00
" specimen of cheese, Mrs. J. C. Brunson,.....	1 00
2d best do., Mrs. C. A. Lamb,.....	50
Best loaf of milk bread, Mrs. J. C. Brunson,.....	50
" loaf of graham bread, Mrs. W. J. Bancroft,..	50
" loaf of corn bread, Mrs. W. J. Bancroft,.....	50
" loaf of any kind of cake, Miss Sarah E. Brunson,	1 00

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2d best do., Mrs. W. J. Bancroft,..... $0 75
2d best specimen of any kind of preserves, Eliel Ingersoll,..... 50

Judges—Mrs. I. T. Hollister, Mrs. G. Rolf, Mrs. J. W. Gardner.

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CLASS XXVI.

Domestic Manufactures.

Best 10 yards of woolen flannel, Mrs. Septa Bottom, $1 00
" 10 yards of woolen carpet, Mrs. Septa Bottom, 1 00
" bed quilt, Mrs. W. C. Bennett,..... 1 00
2d best do., Mrs. Wm. J. Bancroft,..... 50
Best patch work quilt, Mrs. W. J. Bancroft,..... 1 00
" pair of woolen socks or stockings, Mrs. J. C. Brunson,..... 50
Best pair of cotton socks or stockings, Mrs. John Sly,..... 50
Best lot of woolen mittens, Mrs. Septa Bottom,.... 50
" made coarse shirt, Mrs. J. C. Brunson,..... 50
Discretionary—Silk embroidery, Mrs. T. Beaker,.. 1 00

Judges—Miss M. Jenkins, Mrs. Whitlock, Mrs. G. Conn.

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CLASS XXVII.

Needle and Worsted Work.

Best silk bonnet, Mrs. D. Sturgis,..... $1 00
" lace cap, Mrs. D. Sturgis,..... 50
" embroidered skirt, Mrs. L. Swagart,..... 50
" embroidered handkerchief, Mrs. Marcus Annis, 50
" specimen of worsted work, Mrs. W. C. Bennet, 1 00
" two lamp mats, Miss L. J. Houstin,..... 50
2d best do., Mrs. W. C. Bennet,..... 25
Discretionary—Tape work, Mrs. Rufus Briggs,.... 50

Judges—Mrs. Bancroft, Mrs. Sessions, Miss R. Leete.

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CLASS XXVIII.

Flowers, Paintings, Drawing and Wax Work.

Best specimen of paintings, Mrs. H. C. Hodge,....	1 00
2d best do., Mrs. John Sly,.....	50
Best specimen of drawing, Miss Cecelia Sweegles,.	50
" " of wax work, Mrs. John Sly,.....	50

Judges—Mrs. G. Pelf, Mrs. J. Ocabock, Miss J. Wright.

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At a meeting of the Board of Directors of the Clinton County Agricultural and Horticultural Society, held at Hick's Hotel, in St. Johns, on the 3d day of Nov., 1858:

Resolved, That the sum of $5 be paid to Prof. L. R. Fisk, for his Address delivered before this Society.

Resolved, That we allow the printers' accounts by cutting them down one-fifth—to H. S. Hilton $28 20, to John Ransom $23 40.

Resolved, That the Society will pay 28 per cent. of the whole amount of premiums awarded at the last Fair, that being the whole amount of funds on hand.

J. C. BRUNSON,
Recording Secretary.

EATON COUNTY.

No report was received from this County.

GENESEE COUNTY.

Ninth Annual Report of the Executive Committee of the Genesee County Agricultural Society, presented and adopted at the Annual Meeting of the Society held on the 12th of January, 1859, *at the City of Flint.*

In performing the duty assigned them by the 13th Article of the By-Laws of the Genesee County Agricultural

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Society, your Committee have this year but little to add to the recital of the transactions of the Society, since the date of the last Annual Report.

The past season, as you are all aware, being a very unfavorable one for most kinds of farm crops, exercised a corresponding influence upon the exhibition of products at our Annual Fair.

The wheat crop throughout the County, which in the early part of the season looked most promising, did not thresh out, upon the whole, half an average crop; although the yield was very unequal in different localities, the best was hardly over half the usual harvest, and much fell far short even of that. This deficiency was occasioned, partly by the ravages of the Wheat Midge, (*Cecidomyia tritici*,) and yet more extensively by rust, engendered by the very heavy rains, followed immediately by extremely hot sunshine, just about the time the grain was filling to ripen.

Our farmers seem to be turning more attention than formerly was the case, to the cultivation of spring wheat, with a view principally to lesson the liability to injurious attacks from insects; and for the same reason, many favor the propagation of the varieties of wheat, the seed of which has been imported from the countries bordering on the Mediterranean Sea, and called somewhat indiscriminately, Mediterranean wheat.

The crop of Corn, though not a full one, turned out better than wheat. It also was very unequal in its yield—some fields producing an abundant crop of the best quality; while others were almost, or quite a failure. This is mainly to be attributed to the effect of the extreme wet weather which prevailed at the time of planting and cultivating, where the soil was naturally wet or cold. Judging by the numerous specimens of very fine Corn on exhibition at the late Fair, we are pleased to think, however, that the good patches must have overbalanced the poor ones.

Of Hay, a large crop was secured in fine condition.

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The attention paid to the improvement of Stock, does not show any indication of being affected by the influences of climate or weather, which so often govern the value of the farmer's grain harvest. There never before was so good an exhibition in this County, of Horses, horned Cattle, and most other kinds of Stock, as that at the last Fair, notwithstanding that the principal day was so cold and tempestuous as to make it almost unendurable to be out of doors.

But if the storm did not deter competitors from exhibiting their animals, it banished the comfort of visitors; and, we are sorry to say, interfered very seriously with the receipts of the Treasurer. As it will be necessary to refer hereafter to the effect of this casual diminution of the anticipated funds, we go back, to briefly review the proceedings of the Society for the past year.

The Eighth Annual Meeting of the Genesee County Agricultural Society, was held at the Court House, in the City of Flint, on the 13th of January, 1858; the then President, Jonathan Dayton, Esq., in the Chair.

The Eighth Annual Report of your Executive Committee was submitted and adopted at that meeting.

The Annual Report of your Treasurer was also presented and audited, showing the following financial statement for the year 1857:

Balance on hand from 1856, (including $39 of unpaid premiums,]	$190 19
Amount received from County Tax,	100 00
Amount received at the Eighth Annual Fair, October, 1857,	420 00
Total,	$710 19
Disbursements for all purposes,	687 02
Balance on hand,	$23 17

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The following persons were elected Officers for 1858:

President—Henry Schram.

Vice Presidents—One in each Township and one in the City of Flint: Argentine, Isaac Wixom; Atlas, Geo. Kipp; Burton, Harlow Whittlesey; Clayton, J. E. Brown; Davison, Calvin Cartwright; Fenton, S. C. Sadler; Flint City, R. W. Jenny; Flint Township, R. W. Dullam; Flushing, W. J. Kent; Forest, Lyman Crowl; Gaines, James Van Vleet; Genesee, C. H. Rockwood; Grand Blanc, Chauncey Brown; Montrose, John McKenzie; Mt. Morris, G. W. Thayer; Mundy, A. C. Johnson; Richfield, John Hill; Thetford, Crawford Barkley; Vienna, Geo. Sparks.

Secretary—F. H. Rankin.

Treasurer—R. W. Jenny.

Executive Committee—Jonathan Dayton, Dennis Wolverton, Grant Decker, D. H. Seeley, R. P. Aitken, J. L. Gage, Daniel Clarke.

Auditors—S. N. Warren, A. P. Davis.

The Society at that meeting amended the first Section of its Constitution, by striking out the words "to promote Agriculture, Horticulture, Household and Mechanical Arts," and inserting in place thereof, the words "the encouragement and advancement of Agriculture, Manufactures, and the Mechanic Arts."

The Executive Committee met on the 24th of February, and made some progress in the preparation of the List of Premiums to be offered at the Ninth Annual Fair; adopting a new and improved system of classification, and increasing the number of premiums to be given to competitors.

Messrs. Gurdon Waterous, R. A. Carman and Ira Chase were appointed Viewing Committee on Farms.

The Treasurer was instructed to draw from the County Treasurer, the sum of $100 appropriated by the Board of Supervisors for the use of the Society, and pay the same to Mr. Bishop, on account of the purchase money for the addition made to the Fair Grounds.

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The Committee again met on the 5th of March, and completed the Premium List.

The next meeting of the Committee was held on August 27th. The usual Viewing Committees were then selected; and C. H. Rockwood, of Genesee, was appointed Marshal of the Ninth Annual Fair, to be held on the 6th and 7th days of October, 1858.

Henry Schram, F. H. Rankin and Daniel Clarke, were appointed a Committee to procure a speaker to deliver the Annual Address; and Nathaniel Ladd to select ground for the Plowing Match.

In sufficient time before the days designated for the Fair, the Executive Committee, and other members and friends of the Society, met upon the grounds, and devoted a week's labor to their improvement. The track for the exhibition and trial of horses was graded and considerably enlarged; new arrangements and bounds were made for the more convenient distribution and separation of stock, carriages and walking visitors; the buildings were repaired; and provisions made for renting such portions of the grounds as might be required for refreshment tables.

The exhibitions of fast horses, as a distinct competing Class, was tried for the first time at the Ninth Fair, and the result was such as to encourage its continuance. The trotting matches took place on the first day, and excited a great and general interest. The plan adopted to determine the merits of the Horses, was to have them trot singly round the course, while the judges timed their speed. Thus no danger of accident from collision was incurred; and as an attractive adjunct to the other interest of your Fairs, we think this feature will give general satisfaction.

The Plowing Match took place at a later hour on the same day, according to announcement. The competition was lively, and the plowing so good as to afford a practical demonstration of the benefit already derived from the friendly emulation excited at these annual exhibitions of

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skill. Your Committee adopted the rule this year, for the first time, of having the premiums for plowing awarded to the persons who held the plows, without reference to the ownership of the teams, &c. We believe this practice to be equitable, and that it will work well, and would recommend its continuance.

B. M. Fay, A. M., was invited, and consented to deliver the usual Annual Address, and came to the grounds prepared to do so; but the weather was so tempestuous that it was impossible for any speaker to make himself intelligible to an open air audience on such a day as the 7th of October last, and the attempt was not made.

The Awards of the Viewing Committees at the Fair, were all confirmed by the Executive Committee, in accordance with the following:

REPORT of the Viewing Committee at the Ninth Annual Fair of the Genesee County Agricultural Society, held on the 6th and 7th days of October, 1858.

CLASS II.

Full blooded, Shorthorned Durham Cattle.

Bulls, two years old or over—first premium awarded to John Hamilton; second to C. C. Pierson; third to C. S. Thompson.

Yearling Bulls—first premium to C. C. Pierson; second to C. S. Thompson.

Milch Cow—first premium to C. C. Pierson.

Judges—George Crocker, Benjamin Pierson, Gurdon Waterous.

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CLASS III.

Full-blooded Devon Cattle.

Bulls, two years old or over—first premium to D. N. Montague; second to A. B. Pratt.

Of a full-blooded Hereford Bull, entered by Solomon

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Kimball, the committee say: "We find no premium for this grade of Cattle, and would recommend a premium."

Judges—George Crocker, Benjamin Pierson, Gurdon Waterous.

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CLASS IV.

Grade or Native Cattle.

Bulls, two years old or over—first premium to Morris Putnam; second to Elisha Taylor.

Yearling Bulls—first premium to O. F. Gilbert; second to C. C. Pierson.

Bull Calves—first premium to Newel Tupper.

Milch Cows—first premium to C. L. Fuller; second to Nelson Norton; third to M. B. Andrews.

Two years old Heifers—first premium to William Pearson; second to William Bendle; third to C. L. Fuller.

Yearling Heifers—first premium to P. Beamer.

Heifer Calves—first premium to C. C. Pierson.

Judges—J. C. Phillipson, A. W. Davis, G. W. Thayer.

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CLASS V.

Working Oxen, Steers and Fat Cattle.

Working Oxen—first premium to Henry Dunn; second to Benjamin Pierson; third to Daniel Gillett.

Four years old Steers—first premium to Henry Schram; second to William Knowles; third to E. H. Fitch.

Three years old Steers—second premium to Samuel Atherton.

Two years old Steers—first premium to Albertus Crapser; second to A. S. Donelson; third to P. A. Skinner.

Yearling Steers—first premium to Hiram Bristol.

Fat Cows—second premium to H. P. Hull.

The Committee report that there was a close competi-

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tion in Working Oxen; and would recommend that in future they be required to exercise in some way. In three years old, and in yearling Steers, there was no competition; neither was there any competition in Fat Cattle.

Judges—D. N. Montague, Edmund Perry, Jr., Ovid Hemphill.

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CLASS VI.

Blood Horses.

Stallions, four years old or over—first premium to John Hamilton, "Gray Eagle;" second to Ephraim Elwell.

Three years old Stallions—first premium to A. Robinson; second to James Adams, "Henry Clay."

Two year old Stallion Colts—first premium to A. Robinson.

Brood Mares and Foals—first premium to H. Munger.

Judges—David Embury, Asahel Collins, Morris Putnam.

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CLASS VII.

Horses for All Work.

Stallions, four years old or over—first premium to E. W. Rising; second to Walter Cronk.

Three years old Stallions—first premium to Albertus Crapser, "Morgan Eagle."

Two years old Stallion Colts—first premium to Reuben Wetherell; second to Norman Treadwell.

Brood Mares and Foals—first premium to S. Stanley; second to A. Robinson.

Geldings, four years old or over—first premium to C. L. Fuller; second to Caleb Calkins.

Three years old Geldings—first premium to David Smith; second to A. B. Pratt.

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Two years old Geldings—first premium to A. E. Short; second to A. E. Short.

Mares, four years old or over—first premium to Nelson Norton; second to Bisbee & Willey.

Three years old Mares—first premium to Thomas Dimond; second to Isaac Lum.

Two years old Mares—first premium to N. H. Chittenden; second to Reuben Wetherell.

Yearling Colts—first premium to Francis Jacobus; second to T. Cole.

Matched Geldings—first premium to L. G. Bickford; second to William Green.

Matched Mares—first premium to Edwin Dean; second to William Munger.

Judges—C. C. Hascall, William Boomer, A. Munger.

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CLASS VIII.

Draft Horses.

Stallions, four years old or over—first premium to Stephen Wolverton.

Three years old Stallions—first premium to Garret Zufelt, "Bay Canadian;" second to David Curtis.

Brood Mares and Foals—first premium to J. D. Embury.

Matched Horses—first premium to Albert King; and to Samuel Aplin.

Judges—C. C. Hascall, William Boomer, A. Munger.

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CLASS IX.

Trotting Horses.

Trotting Horses—first premium to Rufus Hamilton; second to Bort & Loomis.

Racking Horses—first premium to J. C. Phillipson.

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The Committee Recommend a Discretionary Premium to No. 65, trotting horse entered by Albert Van Slyke.

Judges—David Embury, Asahel Collins, Morris Putnam.

[The following is the time made by each of the Horses that trotted over the course, for the premiums, as recorded by the Judge. The track is said to measure eighty-six rods, and each horse went round it four times.]

	1st round.	2d.	3d.	4th.	Total.
No. 65. Albert Van Slyke,	52 sec.	48 s.	46 s.	50 s.	3 m. 16 s.
No. 123. Bort & Loomis,	50	46	48	50	3 " 14 "
No. 218. D. C. Cuddleback,	54	49	51	56	3 " 30 "
No. 319. Thos. Terwilliger,	47	52	46	49	3 " 14 "
No. 350. Rufus Hamilton,	53	50	42	47	3 " 12 "

Nos. 128 and 319 being a tie for the second premium, had another trial to decide it, when the following time was made:

	1st round.	2d.	3d.	4th.	Total.
No. 123. Bort & Loomis,	46 sec.	48 s.	47 s.	45 s.	3 m. 06 s.
No. 319. Thos. Terwilliger,	46	52	51	46	3 " 15 "

There was only one Racking Horse entered. The time made was as follows:

	1st round.	2d.	3d.	4th.	Total.
No. 5. J. C. Phillipson,	47 sec.	45 s.	49 s.	48 s.	3 m. 9 s.

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CLASS X.

Spanish Full Blood or High Grade Sheep.

Fine-wool Bucks, one year old or over—first premium to P. A. Skinner; second to A. S. Donelson; third to Truman Schram.

Pens of three Ewes—first premium to C. C. Pierson.

Judges—Charles Bates, P. A. Montgomery, Daniel McKercher.

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CLASS XI.

French Full Blood or High Grade Sheep.

Fine-wool Bucks one year old or over—first premium to

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Clark Hutchins; second to Jonathan Dayton; third to C. S. Thompson.

Pens of three Ewes—first premium to Clark Hutchins; second to C. S. Thompson.

Pens of three Buck Lambs—first premium to C. S. Thompson; second to C. S. Thompson.

Pens of three Ewe Lambs—first premium to C. S. Thompson.

Judges—Porter Hazleton, David Schram, Manson Perry.

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CLASSES XII.

Leicester and Southdown Sheep.

Liecester Bucks—first premium to R. W. Dullam; second to William Bendle.

Liecester Ewes—first premium to R. W. Dullam; second to William Bendle.

Southdown Bucks—first premium to William Johnson.

Judges—Jeremiah Slack, Newell Tupper, R. A. Carman.

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CLASS XIII.

Swine.

Suffolk Boars six months old or over—first premium to W, H. Stufflebem; second to Warren Buckley.

Grade or Native Boars four months old or over—first premium to C. C. Pierson; second to Jon. Dayton.

Grade or Native Sows and Pigs—first premium to C. H. Rockwell; second to C. C. Pierson.

The Committee recommend for a Discretionary Premium No. 283, a Suffolk Sow, without Pigs, exhibited by Warren Buckley.

Judges—Stephen Wolverton, Hiram Bristol, Jacob King.

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CLASS XIV.

Poultry.

Brahma Pootras—premium to Mac Williams.

Turkeys—premium to R. P. Aitken.

Ducks—premium to John Delbridge.

Bantams—premium to Lewis Buckingham.

Judges—Manly Miles, Elijah Drake, Harlow Whittlesey.

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CLASS XV.

Farm Implements.

Farm Wagon—premium to Allen & Randell.

Plow for general purposes, (iron beam,)—premium to Williams & Pratt.

Plow for deep plowing, (iron beam,)—premium to H. W. Wood.

Sub-soil Plow—premium to Williams & Pratt.

Fanning Mill—premium to Bort & Loomis.

The Committee would recommend to general notice: Two Cultivators, (not entered;) also a Mowing Machine, (No. 576,) exhibited by C. T. White; and a Grain Reaper, (No. 421,) exhibited by W. W. Gorton—not entitled to premiums, being of foreign manufacture.

Judges—R. A. Carman, Horace Bristol, Lysander Phillips.

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CLASS XVI.

Butter, Cheese, Bread, Honey, etc.

Ten lbs. Butter in rolls—first premium to C. G. Curtis; second to M. B. Andrews; third to Mrs. J. L. Gage.

Fifty lbs. of Butter—first premium to Mrs. J. L. Gage.

New Cheese—first premium to W. W. Gorton; second to Hiram Bristol.

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Maple Sugar—premium to A. Pond.

Maple Syrup—premium to C. C. Pierson.

Honey—first premium to M. H. Foster; second to Albert King.

Milk or Salt Rising Bread—premium to S. J. Bates.

Yeast Bread—premium to B. J. Lewis.

Soda Bread—premium to Mrs. J. L. Gage.

Brown Bread—premium to Mrs. J. L. Gage.

Corn Bread—premium to Mrs. J. L. Gage.

Judges—L. D. Morse, Mrs. L. G. Buckingham, Mrs. R. F. Stage.

CLASS XVII.

Domestic Manufactures.

Woolen Blankets—first premium to E. K. Carrier.

Flannel—first premium to L. Phillips; 2d to L. Phillips.

Rag Carpet—first premium to H. S. Chapins; second to T. Cole; third to Newell Tupper.

The Committee recommend Discretionary Premiums, to No. 420, a Woolen Wove Coverlet, exhibited by O. H. Case; to No. 307, a piece of Linen, exhibited by A. M. Felt; and to No. 229, a Piece of Domestic Table Linen, exhibited by Newel Tupper. The Committee would also remark that there were several pieces of Rag Carpeting on exhibition, besides those to which premiums have been awarded, and all well worthy of notice.

Judges—G. F. Hood, Mrs. Isaac Schram, Mrs. J. J. Beasley.

CLASS XVIII.

Hosiery.

Woolen Knit Stockings—first premium to S. J. Bates; second to Mrs. J. L. Gage.

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Cotton Knit Stockings—first premium to Mrs. A. W. Brockway; second to Mrs. J. L. Gage.

Linen Knit Stockings—first premium to Mrs. J. L. Gage; second to Miss Mary Gage.

Woolen Socks—first premium to Miss Sarah Eldridge; second to H. D. Frost.

Cotton Socks—first premium to Mrs. A. W. Brockway.

Woolen Knit Mittens—first premium to Mary Hiller; second to Mrs. J. L. Gage.

Woolen Knit Gloves—first premium to Miss Mary Hiller; second to Mrs. J. L. Gage.

Committee recommended a Discretionary Premium to No. 365—a pair of Knit Stockings, exhibited by S. D. Halsey.

Judges—Washington O'Donoughue, Mrs. R. W. Jenny, Mrs. William Knowles.

CLASS XIX.

Ornamental Needle Work.

Greatest variety of Worsted Work—first premium to R. L. Lewis.

Ottoman Covers—first premium to Mrs. William Hamilton; second to Miss Mary Drake.

Table Covers—first premium to Miss Mary Drake.

Fancy Chair Work, with Needle—first premium to Mrs. William Hamilton.

Worked Collars—first premium to S. D. Halsey; second to J. S. Wheaton.

Worked Quilts—first premium to Mrs. M. C. Kimball; second to Mrs. W. L. Sholes.

Lamp Mats—first premium to J. T. Johnson; second to R. L. Lewis.

The Committee recommend Discretionary Premiums to the following articles, not enumerated in the printed premium list.

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Best Embroidered Skirt, (No. 202,) exhibited by Mrs. A. Fuller.

Second best Embroidered Skirt, (No. 81,) exhibited by R. L. Lewis.

Best Embroidered Handkerchief, (No. 83,) exhibited by R. L. Lewis.

Best Crotchet Work, (No. 131,) exhibited by J. T. Johnson.

Second best Crotchet Work, (No. 129,) exhibited by J. T. Johnson.

Best Crochet Cake Spreads, (No. 211,) exhibited by S. J. Bates.

Best Embroidered Slippers, (No. 533,) exhibited by Mrs. De Witt Parker.

Best Show Case of Millinery, (No. 53,) exhibited by Mrs. W. A. Morrison.

Second best Show Case of Millinery, (No. 26,) exhibited by Mrs. C. L. Gardner.

Best Chenille Embroidery, (No. 223,) exhibited by Mrs. G. M. Pettee.

Best Silk Embroidery, (No. 213,) exhibited by Mrs. E. A. Johnson.

Second best Silk Embroidery, (No. 222,) exhibited by Mrs. W. N. Pettee.

The Committee would also notice favorably a fine collection of Silk Bonnets, not entered, exhibited by Miss Vorhees.

Judges—William Stevenson, Mrs. S. C. Payne, Miss Fanny Hammersley.

CLASS XX.

Works of Art.

Ornamental Shell Work—first prem. to H. H. Schram.

Wax Flowers—first premium to O. H. Case.

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Artificial Flowers—first premium to Mrs. Julia A. Turner, for hair flowers.

Oil Paintings—first premium to Miss Julia Todd.

Water Color Paintings—first premium to R. L. Lewis.

The committee recommend Discretionary Premiums to the following articles, not specified in the printed premium list:

A Pencil Drawing (No. 42) exhibited by Miss Julia Todd.

A Crayon Painting (No. 43) exhibited by Miss Julia Todd.

Model of Man of War (No. 49) exhibited by N. H. Chittenden.

Marble Head Stone, French style, (No. 137,) exhibited by J. T. Johnson.

Marble Cenotaph, Italian style, (No. 138,) exhibited by J. T. Johnson.

Marble Head Stone (No. 139) exhibited by J. T. Johnson.

Marble Cenotaph, Italian style, (No. 140,) exhibited by J. T. Johnson.

A beautiful Piece of Sculpture, Lion Sleeping, (No. 142,) exhibited by J. T. Johnson.

A Card Basket (No. 160) exhibited by A. J. Page.

A Grecian Painting (No. 561) exhibited by H. H. Schram.

The committee further recommend as worthy of favorable notice:

A Marble Cenotaph, French style, (No. 141,) exhibited by J. T. Johnson.

A specimen of Writing (No. 634) exhibited by Miss Catherine Davison.

Judges—Elijah Drake, Mrs. F. H. Rankin, Miss H. R. Johnson.

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CLASS XXI.

Flowers.

Greatest variety and quantity of Flowers—premium to Mrs. Russell Bishop.

Best and greatest variety of Dahlias—premium to Miss Emma Wesson.

Best Grass Bouquet—premium to Miss Mary Drake.

Judges—A. S. Donelson, Miss Martha Norton, Miss Sarah Phillips.

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CLASS XXII.

Fruit.

Specimens of single variety of Autumn Apples—premium to David Watson.

Best assortment and greatest variety of Winter Apples—first premium to Phineas Thompson; second to C. H. Rockwood.

Specimens of six varieties of Winter Apples—first premium to S. J. Bates; second to Phineas Thompson; third to John Hiller.

Specimens of single variety of Winter Apples—first premium to B. P. Foster; second to William Munger.

Specimens of single variety of Pears—first premium to A. Pond.

Specimens of Peaches—first premium to Joseph King; second to Isaac Schram; third to Isaac Schram.

Watermelons—first premium to B. J. Lewis.

A fine lot of thirty varieties of Apples, correctly named, was brought by E. D. Farnum, of Flint, but owing to neglect in having them entered, do not appear on the book. The committee recommend a Discretionary Premium.

Judges—Daniel Clarke, D. G. Bort, Harlow Whittlesey.

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CLASS XXIII.

Vegetables.

Table Turnips—first premium to William Eckley for "Snow-ball Turnips;" second to Wm. Eckley for "Round Norfolk Turnips."

Beets—first premium to William Winkley; second to William Eckley.

Carrots—first premium to William Eckley, second to William Eckley.

Onions—second premium to B. P. Foster.

Cabbages—first premium to Stephen Wolverton; second to C. C. Pierson.

Tomatoes—first premium to William Knowles; second to Warren Buckley.

Beans—first premium to J. L. Gage; second to W. W. Gorton.

Double Parsley—premium to James Norton.

Winter Squashes—first premium to Albertus Crapser; second to Francis Jacobus.

Pumpkins—premium to C. Gillett.

Table Potatoes—first prem. to John Jordon, for "Pink-eyes;" second to Newel Tupper, for "Meshanocks."

Mexican Potatoes—premium to Albertus Crapser.

The committee find the vegetables generally fine, though not in as great quantity as some years previous. Many of the specimens of potatoes as well as those taking the premiums, were very fine indeed. There was also a fine specimen of Kohl Rabi (No. 403, exhibited by W. W. Gorton,) which we think is entitled to a discretionary premium; and some very fine Pumpkins and Squashes.

Judges—Ira Chase, Samuel Curtis, F. R. Tracy.

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CLASS XXV.

Flour.

Barrels of Flour from least Wheat, with a full statement of same—first premium to William Hamilton, for a barrel of Custom Flour; second to William Hamilton, for a barrel of Extra Flour.

Judges—Nelson Ingersoll, A. T. Russell.

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CLASS XXVI.

Samples of Field Crops.

Winter Wheat—first premium to S. J. Bates, for Mediterranean Wheat.

Spring Wheat—first premium to J. Rea.

Bushels of Corn—first premium to C. H. Rockwood; second to A. Pond.

Twelve Ears of Seed Corn—first premium to A. Babcock, King for Phillip Corn; second to A. S. Donelson.

Flax Seed—first premium to William Eckley.

Barley—first premium to C. C. Pierson; second to P. A. Montgomery.

Your Committee found it exceedingly difficult to determine which samples of Corn were most worthy of premiums. All were excellent. They also found an excellent sample of White Wheat, not entered for premium.

Judges—C. G. Curtis, W. J. Horton, L. R. Middlesworth.

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CLASS XXVII.

Miscellaneous Articles.

Wagon Harness—premium to K. L. Tracy.

Window Blinds—premium to Morse & Co.

Window Sash, 24 lights—premium to Morse & Co.

Panel Doors—premium to Morse & Co.

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Common Brick—premium to J. T. Johnson.

Buckskin Mittens—premium to David Mather.

Buckskin Gloves—premium to David Mather.

Specimens of Book Binding—premium to Thos. Symons.

The Committee recommend as worthy of Discretionary premiums:

An Aquarium, (No. 44,) exhibited by Willis Lyon, first premium.

An Aquarium, (No. 587,) exhibited by C. J. Rankin, second premium.

Hose Cart, manufactured for Protection Company No. 2, by Allen & Randall, of the city of Flint, (No. 490.)

Ornamental Stand, (No. 47,) exhibited by Mrs. O. H. Case.

Cutter, (No. 50,) exhibited by Edmund H. Wicks.

Bottle of Currant Wine, (No. 469,) made in 1847, by Mrs. M. M. Henderson; a fine article, with which your Committee were particularly well pleased.

Pair of Quilt Frames, (402,) exhibited by Mac Williams.

Three Jars of Confectionery, (No. 465,) exhibited by Ingersol & Bishop.

Jar of Pickels, (No. 468,) exhibited by Mrs. H. M. Henderson.

Wood Packing Box, (No. 549,) exhibited by D. Schram.

Specimens of White Pine Boards, (No. 515,) manufactured by H. H. Crapo.

Also as worthy of favorable notice:

Specimens of Roofing and Draining Tile, (No. 52 exhibited by George Andrews; Nos. 132, 133, and 134 exhibited by J. T. Johnson,) manufactured by John T. Johnson, of Flint.

Cook Stove, "Economist," (No. 502,) exhibited by O. F. Forsyth.

Dining Room Stove, (No. 503,) exhibited by O. F. Forsyth.

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Parlor and Dining Room Stoves, exhibited, but not entered by P. H. Stewart.

Case of Mechanics' Tools, (No. 504,) exhibited by O. F. Forsyth.

Pair of Tailor's Irons, (No. 158;) pair of Sad Irons, (No. 157;) and a Coffee Roaster, (No. 159,) exhibited by B. P. Lyon.

A Fire Engine, (Button's manufacture,) exhibited by Protection Company No. 2. An efficient machine, and kept in the finest order.

Judges—C. P. Avery, Jerome Eddy, Harry Parsell.

CLASS XXVIII.

Plowing Matches.—With Horses.

The Committee found it difficult to decide, as the Plowing was all done in a workmanlike manner; we have therefore awarded the first premium to J. C. Philipson; second to Richard Judd; third to John Hattin; fourth to Martin Wrion.

With Oxen.

There was but one team on the ground which did the work well; we therefore have awarded the first premium to Warner Pierson.

Judges—R. A. Carman, Horace Bristol, Lysander Phillips.

In the existing state of the funds, the Committee being unable to pay any money for *Discretionary* Premiums, adopted the following resolution, which was published in October last, with the reports and recommendations of the Judges:

Resolved, That inasmuch as the Society has no available funds for the payment of the *Discretionary* Premiums recommended by the Viewing Committees, after paying the regular premiums, and discharging the installment due of

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the purchase money for the Fair Grounds—one of the Books belonging to the Society be given in case where a Discretionary Premium has been recommended.

The Report of the Viewing Committee on Farms, which has just been received, is as follows:

REPORT OF COMMITTEE ON FARMS.

To the Executive Committee of the Genesee County Agricultural Society:

Your Committee on Farms visited the Farms of Albertus Crapser, and C. C. Pierson; and have decided that Albertus Crapser is entitled to the first premium, and we also recommend the second premium to C. C. Pierson.

GURDON WATEROUS,
Chairman of Committee.

Grand Blanc, Dec. 15, 1858.

The Farm of Mr. Crapser, to which the Judges awarded the first premium, not having been entered within the time prescribed by the rules, the Executive Committee have not felt justified in confirming that part of the Report which awards him the premium; believing that the Society should in all cases require a strict observance of its laws, in order that justice may be done equally to all competitors, we have accordingly refused our assent to that award. The remainder of the report has been adopted.

Since the last Annual Report was made, your Treasurer has paid to Mr. Bishop, who holds the mortgage for the purchase money of the addition to the Fair Ground, bought in 1857, the sum of $182 25 on account of principal and interest. The payment of this debt, and the necessary expenses, combined with the very serious diminution in the anticipated receipts caused by the State of the weather already referred to, has occasioned some delay in the payment of a portion of the premiums awarded; an accident which your Committee exceedingly regret, but could not possibly control. We have no doubt that had the weather been favorable, the receipts at the Fair would have been

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ample to have discharged promptly all the present obligations of the Society. However, even under the unfavorable circumstances that did exist, the worst consequence is a little delay in the receipt of their premiums by some of the successful competitors. In a few weeks your Treasurer will be enabled to resume the payment of those still due, from the appropriation made by the Board of Supervisors, for the use of the Society; and which this Committee have instructed your Treasurer to apply to the discharge of those premiums, as soon as received by him from the County Treasurer.

We close our report with a few practical suggestions, which we would recommend to the consideration of the members of our Society.

The maxim "Every man a debtor to his profession," is no where more pertinent in its application, than to the Agriculturist; and, no where is the reciprocal benefit of a response to it, more prompt and conspicuous; and were the responsibility of this obligation duly felt, and accompanied with a corresponding effort to cancel it, we cannot doubt that a vast change would speedily be effected in the farmer's condition; and through him, exert its benign influence upon the world at large.

During the process of clearing and subduing a wild country, and under the exigencies of pioneer life, it is not to be expected that Agriculture would be very systematically or scientifically pursued. But though there is a vast amount of wild land in our county still remaining to be subdued, so much has been brought under cultivation, and so many farms orderly arranged, in some sections at least, that we may be considered as entering upon the second period of our Agricultural history, a period at which the maxim before alluded to becomes applicable.

In order that the business of farming may be carried on systematically, scientifically, and with the greatest success, it is of primary and paramount importance, that the farmer

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keep accurate accounts, not only with his neighbors and all others with whom he may have dealings, but also with his farm, his stock and his crops. In this way alone can he answer to himself or others, the many queries which constantly arise, as to the comparative and net profit of a particular crop, breed of cattle, or sheep, &c.; the adaptation of particular crops to different soils; the best methods of cultivation, &c.; the comparative value of different general and special manures, &c.

To accomplish these desirable objects, which are the first steps to be taken? Premising, of course, that his farm is already enclosed with a good substantial fence, such an one as will effectually debar any danger of litigation with his neighbors, from trespass of cattle, let the farmer next divide it into a suitable number of convenient fields, designating each by name or number. Let these be thus entered in his journal, with a full and accurate description of each; its soil, whether sand, gravel, loam, clay or muck, &c.; its surface, whether level or rolling, moist or dry, &c.; its original growth of timber, &c., if known; in short, all circumstances which may have a bearing upon its relations to any crop. An incidental advantage of no small moment, growing out of such a course, would be the necessity it involves of a thorough study of each and every portion of his farm, which cannot fail to be of great service in itself; but still more by the requisition it may make to its most satisfactory accomplishment, for some knowledge of Chemistry, Geology, Mineralogy, &c.; and thus awaken an interest in the study of those sciences, which may lead to a devotion to their pursuit which cannot fail of profitable returns not only to the great interest of Agriculture, but also, to the still greater interest of Education.

In the next place, let each field be charged with everything expended upon it, whether labor in cultivating, drainage, &c., or cost of seed, manure, &c., and credited by

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its produce. The balance will readily show the profit or loss.

Let this course be pursued constantly and accurately for a series of years, and then the farmer will be prepared to *know* what crops and what method of cultivation will pay best. So in regard to stock, sheep, &c., is he in doubt whether Durham or Devon, Saxon or Merino, or some other blood is most profitable for him to keep, the faithfully kept record will give a ready and reliable solution. Nor is it necessary that he should try each experiment for himself; let him compare notes with his neighbor who has pursued the same accurate and reliable course, and he will be able to form a trustworthy opinion, not based upon any surmise or guess. Indeed, it is here that the value of such a system becomes conspicuous, and in carrying it out with fidelity, the farmer pays a debt due to his profession which reacts in two-fold proportion to his own individual benefit.

These considerations naturally suggest the recommendation of another means of mutual improvement to our farmers—one which has been successfully tried in older sections of the country. We refer to the formation of "Farmers' Clubs" for towns, and neighborhoods, wherever a sufficient number who feel an interest in their profession can be conveniently convened. Let these meetings be devoted to a comparison of notes, and the discussion of topics growing out of them; to lectures on Geology, Chemistry, &c., in their application to agriculture; a consideration of the best methods of counteracting and preventing the ravages of insects, &c. The suggestions thus drawn out, and the thoughts thus elicited, tested by further action and pondered in solitary hours of mental leisure, while the hands, perchance, may be employed in guiding the plow or some other occupation almost purely mechanical, and reproduced at a subsequent meeting, may become the germs of improvements as little dreamed of at present, as

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was the Atlantic Telegraph by Galvani when rehearsing his experiments on dead frogs, or the present perfection of the Steam Engine by the first Chemist who observed the elastic power of heated vapor.

The influence of such a system in imparting life, vigor and real efficiency to our Agricultural Societies, can hardly be over-estimated; and hence as one of the best means of promoting their own prosperity, it may come within their sphere to encourage and sustain such enterprises. With this view of the subject, we would respectfully recommend to our County and State Agricultural Societies, that they give especial encouragement to the practice of making accurate records of careful observations, by the offer of liberal premiums for such productions.

All of which is respectfully submitted.

For the Executive Committee,

F. H. RANKIN,
Secretary.

Flint, December 31, 1858.

HILLSDALE COUNTY.

REPORT OF THE EXECUTIVE COMMITTEE FOR 1858.

In presenting the eighth annual report of the Hillsdale County Agricultural Society, your committee are pleased with the marked success that have attended your efforts in establishing a higher grade of Agriculture in the county. Ready and marked results have been reached by the adoption of the mixed system of farming. It is very encouraging to know that the past has been a steady success from year to year, and the result of our late Fair is the best evidence that this interest has not abated. Had it not been for the severe storm on the night of the first day, and continuing far on the second, we should have made the largest exhibit ever made in the history of the Society. With all our disadvantages, our entries reached

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the very respectable number of 940, against 968 last year. Our premiums awarded were 421, against 368 last year, amounting to $686 00.

The receipts of the Society have been:

From the county,.....	$128 94
From membership and gate tickets sold,.....	546 50
Making a total of.....	$675 44

Our expenses have been:

For general purposes,.....	$271 33
For premiums awarded,.....	686 00
Making a total of expenditures,.....	$957 33
Total receipts,.....	675 44
Leaving a balance against the Society for the year of.....	$281 89

We refer you to the Treasurer's report for a statement of the funds of the Society on the first Monday of January, 1859.

All of which is submitted.

W. H. MILLER, *Chairman.*

F. M. HOLLOWAY, *Secretary.*

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TREASURER'S REPORT FOR 1858.

F. Fowler, Treasurer, in account with Hillsdale County Agricultural Society.

DR.

To am't of cash on hand from last year,.....	$158 62
" received for 571 membership tickets,...	428 25
" received for 590 gate tickets,.....	118 25
" received from County Treasurer,.....	128 94
Total,.....	$834 06

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CR.

By am't of general expense orders p'd,..	$271 33	
" premiums p'd to Jan. 1, 1859,	540 25	
		811 58
Leaving on hand a balance of.....		$22 48

All of which is submitted.

F. FOWLER, *Treasurer.*

INGHAM COUNTY.

OFFICE OF SEC'Y OF INGHAM CO. AG'L SOC'Y,
Mason, December 20th, 1858.

HON. R. F. JOHNSTONE, *Sec'y of Mich. State Ag'l Soc'y:*

SIR—In pursuance of the requirements of the statute, I herewith transmit to you a full copy of the proceedings of the Ingham County Agricultural Society for the year 1858, comprising the proceedings of the annual meeting, a list of the premiums awarded, a statement showing the amount of receipts and expenditures for the same time, together with a copy of the annual address delivered before the Society at its Fair on the first day of October last, by Prof. L. R. Fisk, of the Agricultural College.

GEO. M. HUNTINGTON, *Secretary.*

PROCEEDINGS OF ANNUAL MEETING FOR THE YEAR 1858.

In accordance with a provision of the Constitution, and pursuant to previous notice, the members of the Ingham County Agricultural Society met at the office of O. M. Barnes, Esq., in the village of Mason, on Tuesday, the 28th day of January, A. D. 1858.

The meeting was called to order by the President, Huram Bristol, Esq.

After receiving and adopting the reports of the Treasu-

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rer and Secretary, on motion of O. M. Barnes, the meeting proceeded to the election of officers for the ensuing year, which resulted in the election of the following persons, viz:

President—Huram Bristol, Esq., of Vevay.

Treasurer—William Woodhouse, Esq., of Lansing.

Secretary—Geo. M. Huntington, Esq., of Mason.

Directors—Geo. B. Fuller, of Williamston; H. A. Hawley, Vevay; F. S. Fitch, Bunkerhill; H. B. Shank, Lansing; J. W. Seeley, Vevay.

Vice Presidents—Joseph Gale, of Onondaga; R. R. Bullen, Aurelius; Joab Polhemus, Delhi; F. LaRue, Lansing; A. A. Kirby, Leslie; James Fuller, Vevay; Isaac Drew, Alaiedon; W. F. Kelley, Meridian; E. H. Angell, Bunkerhill; Samuel Skadan, Ingham; Geo. Beaman, Wheatfield; Jas. W. Williams, Williamston; M. D. L. Branch, Stockbridge; Peter Dietz, LeRoy; —— Spencer, Locke.

On motion of P. McKernan, the constitution was amended by a two-thirds vote of all the members present, in manner following, to wit: Amend Article 3 of the constitution, by adding in the third line, after the word "Secretary," the word "Marshal."

The meeting then proceeded to the election of a Marshal, which resulted in the election of Matthew Elder, of Mason.

On motion it was

Resolved, That the Executive Committee be instructed to extend the Premium List, principally upon articles for premiums, to at least five hundred dollars, and also that they be instructed to offer suitable premiums for Lady Equestrianism; also, to meet as soon as practicable, and make out and publish the Premium List for 1858.

Geo. M. Huntington offered the following resolution, which was received and adopted:

Resolved, That the thanks of the Society are hereby tendered to Huram Bristol, Esq., Henry Hawley, and Pe-

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ter Low, Esq'rs, for the uniformly courteous manner in which they have so ably and faithfully discharged the duties of their respective offices, during the year 1857.

On motion, adjourned.

P. LOW, *Secretary.*

Statement of Secretary, received and accepted.

LIST OF PREMIUMS

Awarded at the Fourth Annual Fair of the Ingham County Agricultural Society held on the Grounds of the Society at Mason, on Thursday, Sept. 30, *and Friday, Oct.* 1, 1858.

CATTLE.

CLASS I.

Blooded.

Best bull 2 years old, D. L. Cady,.....	$3 00
2d best do., Jas. Huffman,.....	2 00
Best bull, 1 year old, J. J. Tuttle,.....	
" bull calf, D. L. Cady,.....	50
" cow 4 years old and over, D. L. Cady,.....	5 00
" heifer 2 years old, "	3 00
" heifer calf, D. L. Cady,.....	1 00

The Committee further report that they have examined many other cattle in their class worthy of merit; particularly 1, 2 and 3, (owned by C. A. Jeffers, of Washtenaw county,) and marked "foreign," which are not permitted to compete for premiums. They would therefore recommend them as the best in Class No. 1, on exhibition.

CLASS II.

Cross of Blood.

Best bull 4 years old and over, Harvey Hammond,.	$4 00
" bull 3 years old, J. L. Clark,.....	3 00
" bull 2 years old, A. Y. Olds,.....	2 00

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Best yearling bull, E. Blanchard,	$1 00
2d best do., T. Birney,	50
Best bull calf, J. Coatsworth,	1 00
" cow 4 years old and over, D. L. Cady,	4 00
" 2 year old heifer, J. Coatsworth,	2 00
" heifer calf, D. L. Cady,	1 00

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CLASS III.

Natives.

Best bull 1 year old, Wm. F. Near,	$1 00
" cow 4 years old and over, A. Holden,	4 00
2d best do., Wm. M. Webb,	3 00
Best cow 3 years old, Daniel Searls,	3 00
" 2 year old heifer, David Palmer,	2 00
2d best do., Joseph Wilson,	1 00

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CLASS IV.

Working Oxen and Steers.

Best yoke oxen 4 years old and over, A. D. Aldrich,	$4 00
2d best do., R. Everett,	3 00
Best yoke oxen, 3 years old, J. L. Miller,	3 00
2d best do., E Rumery,	2 00
Best yoke steers 2 years old, O. Griffin,	2 00
2d best do., Elisha Bennet,	1 00
Best yoke yearling steers, S. A. Holcomb,	2 00
2d best do., Chas, Foler,	

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CLASS V.

Horses.

Best stallion 5 years old and over, A. H. Welden,	$5 00
2d best do., Whitney Smith,	4 00
Best stallion 4 years old, A. F. Ingals,	4 00

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2d best do., Geo. Beaman,.....	$3 00
Best stallion 3 years old, J. T. Everett,.....	3 00
" 2 " B. Leek,.....	2 00
Best mare 5 years old and over, A. F. Ingals,.....	5 00
2d best do., W. Saunders,.....	4 00
Best mare 3 years old, A. Furgerson,.....	3 00
2d best do., P. Asseltine,.....	2 00
Best mare or horse 1 year old, Franklin Sknudder,.	2 00
2d best do., N. Hartwick,.....	1 00
Best mare or horse colt, N. Hartwick,.....	2 00
Best mare and colt, Elisha Hammond,.....	4 00
Best pair matched horses or mares 5 years old or over, Wm. F. Near,.....	4 00
2d best do., H. E. Fifield,.....	3 00
Best pair matched horses 3 years old, Geo. B. Webb,	3 00
Best single horse for carriage, Aaron Bennet,.....	3 00
2d best do., J. Coatsworth,.....	2 00
Best horse under saddle, E. Hull,.....	3 00
2d best do., Sanders,.....	2 00

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CLASS VI.

Blooded Sheep.

Best buck, E. Blanchard,.....	$3 00
2d best do., J. Polhemus,.....	2 00
Best lamb, E. Blanchard,.....	2 00
2d best do., J. Polhemus, ...	1 00
Best 3 ewes, H. A. Hawley,.....	3 00
" 3 lambs, "	2 50
" 1 ewe, Andrew Hunt,.....	2 00
2d best do., E. Blanchard,.....	1 00

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CLASS VII.

Cross of Full Blood Sheep.

Best buck, Thomas Field,.....	$3 00
" 3 lambs, H. A. Hawley,.....	2 00

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CLASS VIII.

Swine.

Best boar, A. Holden,	$3 00
" sow, J. L. Huntington,	2 00
" sow and pigs, not less than 3, Jas. Kelly, Jr.,	3 00
2d best do., D. L. Cady,	2 00

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CLASS IX.

Poultry.

Best lot Shanghais, J. W. Post,	$1 00
" turkeys, Geo. B. Webb,	1 00
" ducks, J. Q. Thompson,	1 00

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CLASS X.

Grain.

Best bushel wheat, Loren Sweet,	$2 00
2d best do., Geo. B. Fuller,	1 00
3d best do., S. H. McEwen,	50
Best bushel barley, Geo. B. Webb,	1 00
2d best do., A. Y. Olds,	75
Best bushel oats, J. Q. Thompson,	75
2d best do., Noah Phelps,	50
Best peck ears yellow corn, W. F. Kelley,	1 00
2d best do., Noah Phelps,	75
Best peck ears white corn, Andrew Hunt,	1 00
2d best do., J. Q. Thompson,	75
Best ½ bushel beans, J. Q. Thompson,	1 00
" " peas, "	75
2d best do., H. A. Hawley,	50
Best ½ bushel buckwheat, Henry Slaght,	50
2d best do., Noah Phelps,	

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CLASS XI.

Vegetables.

Best bushel potatoes, Alvin Rolf,	$1 00
2d best do., O. Griffin,	75
Beck peck onions, Geo. B. Webb,	75
" peck turnips, William Sitz,	75
" peck beets, Joab Polhemus,	75
2d best do., Alvin Rolf,	50
Best 6 heads cabbages, C. D. Huntington,	75
2d best do., Geo. B. Webb,	50
Best peck tomatoes, Andrew Hunt,	75
2d best do., Peter Low,	50
Best 6 pumpkins, Alvin Rolf,	75
Best and greatest variety of vegetables grown by exhibitor, Geo. B. Webb,	3 00

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CLASS XII.

Fruit.

Best peck winter apples, Alvin Rolf,	$1 00
" 6 varieties apples, "	1 00
" specimen " "	75
" specimen fall apples, T. Birney,	75
2d best do., A. Rolf,	50
Best peck pears, T. Birney,	75
" peck peaches, E. Rumery,	75
2d best do., Wm. Page,	50
Best peck quinces, Chas. Arnold,	75
" collection of grapes, E. Rumery,	1 00

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CLASS XIII.

Farm Implements.

Best plow, Ira H. & J. Beach,	$2 00
" fanning mill, S. P. Strond & Co.,	1 00

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CLASS XIV.

Mechanic Arts.

Best single buggy, Wm. Woodhouse,.....	
2d best do., John B. Dakin, ...	
Best pair stoga boots, R. Haywood,.....	$0 50
" pair fine boots, "	75
" pair ladies' gaiters, Mrs. C. A. Hulse,.....	75
" cutter, I. O. Darling & Co.,.....	1 00

This Committee report further that the best single buggy on exhibition was No. 11, (Wm. Woodhouse,) and the second best No. 71, (John B. Dakin,) neither of which was manufactured by the exhibitors within the State, and therefore the Committee have no power to award premiums, but would recommend them as superior.

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CLASS XV.

Stoves Hardware and Cutlery.

Best parlor stove, J. W. Phelps & Co.,.....	$1 00
2d best do., "	75
Best cooking stove, "	1 00

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CLASS XVI.

Bread, Butter, Cheese and Honey.

Best hop yeast bread, Mrs. J. Chapin,.....	$1 00
" salt rising bread, Mrs. C. A. Hulse,.....	1 00
2d best do., Mrs. J. W. Post,.....	50
Best sample butter, not less than 10 lbs., Mrs. J. Wilson,.....	1 00
2d best do., Mrs. J. Chapin,.....	50
Best cheese, Mrs. J. D. Reeves, ...	1 00
2d best do., Mrs. E. Hammond,.....	50
Best lot of honey, not less than 10 lbs., Wm. Page,.	1 00

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CLASS XVII.

Domestic Manufactures.

Best 10 yards carpet, Peter Low,	$1 00
Best 10 yards rag carpet, Edy Baker,	1 00
2d best do., Mary Hunt,	50
Best coverlet, Mrs. W. Wheaton,	1 00
2d best do., Mrs. A. Parker,	75
3d best do., Mrs. J. Chapman,	50
Best quilt, Mrs. R. F. Griffin,	1 00
2d best do., Mrs. W. Wheaton,	75
3d best do., "	50
Best woolen shawl, Mrs. J. Q. Thompson,	1 00
Best pair woolen stockings, Mrs. Mary Hunt,	50
2d best do., Mrs. H. A. Hawley,	50
Best pair woolen mittens, Mrs. H. A. Hawley,	50
2d best do., Mrs. J. Chapman,	25
Best stocking yarn, Mrs. Mary Hunt,	1 00
2d best do., Mrs. D. A. Hughes,	50

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CLASS XVIII.

Needle, Shell and Wax Work.

Best embroidery, Miss Sarah Beeman,	$1 00
2d best do., Mrs. O. M. Barnes,	50
Best embroidered Skirt, Mrs. W. Wheaton,	1 00
2d best do., S. Marsh,	75
Best embroidered handkerchief, Mrs. W. Wheaton,	75
Best embroidered collar, Mrs. W. Wheaton,	50
2d best do., Mrs. D. A. Kelley,	50
Best embroidered scarf, Miss Sarah Beeman,	75
Best crochet collar, Miss Julia Polhemus,	75
2d best do., Miss T. J. Brown,	25
Best crochet tidy, Miss Julia Polhemus,	75
Best embroidered bed spread, Chas. Foler,	1 00
Best 2 lamp mats, Mrs. A. Parker,	50

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2d best do., Mrs. J. Polhemus,.....
Best artificial flowers, others than wax, Miss Lorinda Pease,.....

Discretionary Premiums in Class 18.

Beautiful collar, Mrs. D. A. Kelley, ...	$0 25
" crochet collar, Mrs. G. B. Webb, ...	25
" work basket, Mrs. J. Polhemus,.....	25
Best crochet table spread, Mrs. J. T. Brown,.....	1 00
2d best do., Miss Celestia R. Tuttle,.....	75
3d best do., Miss Helen Covert,.....	50
4th best do., Mrs. G. B. Webb,.....	50
Beautiful table spread tidy, Miss Celestia R. Tuttle,	75
" crochet sleeves, "	25

The Committee for Class No. 18 would further report, that there were many other articles on exhibition in their Class, very superior and worthy of merit; but as the Committee's discretionary power is limited, they can only give them favorable notice.

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CLASS XIX.

Paintings, Drawings, Daguerreotypes and Flowers.

Best oil painting, drawn by exhibitor, H. Wilcox,..	$2 00
2d best do., H. Wilcox,.....	1 00
Best water color painting, C. Gratton,.....	1 00
" monochromatic drawing, Miss Augusta McRoberts,.....	1 00

Discretionary Premiums in Class XIX.

Best specimen of pencil drawing, G. G. Torry,....	1 00
" " of Grecian painting, Mrs. W. Smith,	1 00

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CLASS XX.

Miscellaneous Articles.

Best piece of domestic satinet, H. Slaght,.....	$0 25
" piece of double cloth, (or hard times,) Thomas Field,.....	25
Best hearth rug, A. Parker,.....	50
" side-saddle, J. Polhemus,.....	
" watermelon, H. B. Tiller,.....	
" butter-ladle, J. Q. Thompson,.....	
" ladies' bonnet, Mrs. J. S. Griffin,.....	50
" set hair flowers, Mrs. W. Wheaton,.....	50
" lot of jewelry, I. Gillett, Jr.,.....	50
" peck hulled barley, H. Slaght,.....	
" 1 cheese press, Geo. B. Webb,.....	25
" half bushel timothy seed, H. A. Hawley,.....	
" cistern force pump, Bignold & Beach,.....	
" pitcher spout cistern pump, Bignold & Beach,	
" 2 model gates, Calvin Ketchum,.....	25
" set wooden bowls, John Mull,.....	25
" lot tin ware, J. W. Phelps & Co.,.....	
" hay racks, Jas. D. Hulse,.....	25
" span mules, J. L. Clark,.....	1 00
" set horse shoes, H. Nelson,.....	25
" specimen of pork barrels, Wm. Tubbs,.....	50

The committee in Class No. 20 further report, that they have examined many other articles on exhibition in their Class which are worthy of merit, especially the pumps manufactured and exhibited by Messrs. Bignold & Beach, and also the county maps of this State (No 33.) exhibited by Messrs. Giel, Harley & Siverd, which we would highly recommend.

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CLASS XXI.

Ladies Equestrianism.

Best specimen of Ladies Equestrianism, Miss P. Graves,.....	$4 00
2d best do., Miss Jane Coatsworth,.....	3 00
3d best do., Miss Delphene Hunt,.....	2 00
4th best do., Miss Brown,.....	1 00

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CLASS XXII.

Field Crops.

Best acre of wheat, Noah Phelps,.....	$5 00
" " corn, O. Griffin,.....	4 00
" " oats, Noah Phelps,.....	3 00
" quarter acre of potatoes, Noah Phelps,.....	2 00

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ADDRESS

Before the Ingham County Agricultural Society, at its Annual Fair, October 1st, 1858, by Prof. L. R. Fisk, of the Agricultural College.

Mr. President and Members of the Agricultural Society:

It is a more difficult task to determine correct systems in Agriculture than in any other industrial pursuit. *What* to do, and *how* to do, is not so easy to decide as many persons think. The farmer, indeed, has a very intricate problem to solve, of which no man can hope to present an infallible solution. This problem is, how to secure the most profitable productiveness of his farm. With capricious elements overhead, and mysterious changes under foot, how to bind the winds that blow, and vivify the soil beneath him—uniting heaven and earth to make a living plant—excuse me when I make the remark, that it is no common thing to find a farmer that understands his trade. It is no common thing; and why? Simply because he

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needs to know so much. It is a trite remark that "any man may be a farmer." This is a foul slander on the profession. He who says it would do well to keep silent, lest his braying betray his ears.

And when I assert that productive agriculture demands a high grade of intelligence, do not understand me as endorsing all the quackery of city farming, or what is sometimes falsely termed educated or scientific farming. But I disclaim the latter because it is uneducated; because, while it assumes the garb of science, it is the offspring of ignorance. He is an educated farmer who knows just *what* to do, and the *reasons* for it. He is not an educated farmer who has studied a little Chemistry, Botany, Physiology, Meteroology, or Geology, but who is ignorant as to the time of ploughing, or mode of preparing the soil; he is not an educated farmer who has failed to learn the art of farming, the practical application of correct principles, who is unskilled in the *when* and the *how*. In farming experience is as necessary as in watch-making, or any other mechanical art. He would be but a poor blacksmith who had never seen the inside of a blacksmith shop, although he might have spent a lifetime in his study analyzing the laws of force.

Every art is a trade; and in every trade there is something to do, as well as to know; and practical skill is required to correctly apply the knowledge possessed. He who assumes the superintendence of a farm, must know something more than simply the philosophy of vegetable growth; he should know how to provide for the plant those circumstances, and how to subject it to those conditions required to secure its proper development. The farmer can much better afford to dispense with his scientific than his practical knowledge of agriculture. Without the latter he must fail; but without the former he may follow approved methods and usually succeed.

Abstract knowledge is the curse of some men. They

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have a great deal of learning but little wisdom. Others must have a hobby to ride; there is some *one* thing that is going to revolutionize agriculture, and make us farmers all rich. It is sub-soil ploughing, the use of plaster, or superphosphate of lime, blooded stock, or Shanghai chickens, or some other speciality, which is going to supply the long felt *desideratum*. Another man takes an agricultural paper, believes everything he reads, puts it all in practice without regard to circumstances, finds it "money out of pocket," and then summarily pronounces all book farming a humbug. There is still another class of men who have always lived in the city. They have read about the wonderful properties of this fertilizer, and the great gain of such a process, and are astonished that farmers are so far behind the times. They abandon the city for a country life, put their city theories in practice; get one dollar, perhaps, for every two or three expended; and finally conclude that farming is a poor business after all. They probably believe they are *too highly educated* for farmers.

Now there is doubtless a right way and a wrong way; and much that goes under the name of scientific farming is a base imposition. Why, you might as well attempt to teach a blind man colors, as to make a successful farmer without experience. A man cannot be a mechanic unless he understands the use of tools; no more can he be a farmer without understanding *methods* of farming—*when* and *how* to do his work.

I am a firm believer in the utility of applying science to agriculture; but I wish, from the very outset of my remarks, to protest against the injustice of charging science with the ignorance and follies of assumed scientific men. Science is responsible for its own teachings, and not those of its votaries; still less is it responsible for the errors of the pretentious egotist.

In securing the highest productiveness of the soil, I believe that science and experience must work hand in hand;

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and in this address I shall confine myself to the consideration of some plain facts in scientific and practical agriculture.

I have no doubt that much of the suspicion with which science in its application to agriculture is regarded, has grown out of a wrong conception of science itself. What is science? It is but an expression of nature's laws. The laws of science can never originate with man; God has made them and they are eternally fixed. Now it cannot certainly be that man becomes less fitted to cultivate the soil by gaining a knowledge of nature's laws as applied to the soil; that success is the child of ignorance. It is true, that that which goes by the name of science may sometimes lead us into error. The error is the result of ignorance not of knowledge. It must not be charged upon science, for science never teaches a falsehood; it teaches us itself only. Our inferences may be false, but such inferences man draws, not science. The science of the growth of a plant is simply the mode in which nature operates in producing the plant. To follow the science of the cultivation of the soil, we simply conform to the laws of nature which prevail in the soil. Scientific agriculture, then, in its strict and only true sense, can mean nothing more or less than an entire conformity to the laws of nature in the cultivation of the soil. Assuming to teach science, man may teach what is false; but he does not teach science, for science is truth; he teaches his own opinions, and they may be erroneous.

No evils need accrue from endeavoring to apply science to agriculture, if men would carefully discriminate between what is known and what is probable or hypothetical. There will always be a class of minds that will build up wild theories on the basis of known facts; indiscriminately intermingling hypothesis with determined truths, and announcing the confused medley as the teachings of science. I have only to say, that science is not the parent of such mon-

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strous hybridity; its offsprings are not marred by a single defect; they are the children of truth, and characterized by all the grace and beauty of perpetual youth.

The office of the farmer is a noble one. It is to create the vegetable world out of the mineral. He labors in that laboratory of mysterious change where dead matter is made to live; where to the lifeless elements of the soil and air, a vital principle is imparted which possesses a wonderful power of transforming matter, and working it up into beautiful and useful forms. It is his province to co-operate with nature, to assist nature, to direct nature; and yet he must obey nature. Man here can rule only by implicitly obeying. Nature, indeed, is like a shrewd mistress; she will submit to external dictation just so long as it does not interfere with her settled plans.

Plants are decidedly fastidious in their selection of food. Possessed of innumerable mouths, they are constantly eating. They live both upon air and soil, but are extremely choice of the elements they receive. The air is composed almost entirely of oxygen and nitrogen, but the plants rejects them both; but the carbonic acid which comprises the 1-2500th, and ammonia the 1-10,000,000th part only of the atmosphere, it greedily seizes and devours. Without these compounds it could not live. Increase them within a reasonable limit, and it grows faster and larger; perceptibly diminish their amount, and it becomes poor and dies.

Far back in the history of the earth, there was a time when the atmosphere contained more of carbonic acid—this necessary food of plants—than at present. It was long before the creation of man; it was at the commencement of what is termed the carboniferous period; that period in which our coal measures were deposited. This carbon—and the coal is mostly carbon—the plant selected from the air; it became subsequently buried beneath the water, and never again returned to the atmosphere to nourish vegetation. The vegetable growth of the coal

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period far surpassed the present; and doubtless the most important cause, was the greater abundance of carbonic acid in the atmosphere. The air, it will be remembered, supplies to the plant the greater part of its nourishment; but being a department of nature which yields less than the soil to the dictation of man, it receives less of his attention.

With the agriculturist, then, the farm is the basis of his operations. It is the foundation of his wealth. It is to him the origin of all those forms of productiveness on which he is to depend for his income.

That part of the plant which on combustion remains as ash, came directly from the soil. It is composed of that portion of the soil which, being dissolved in water, the roots of the plant absorbed and introduced into its circulation. These ingredients are a special care of the agriculturist. No plant will grow unless the necessary elements are present in the soil. The first and chief attention of the farmer then, must be given to the condition of the soil.

Chemical science, and experimental agriculture—neither alone could prove the fact—have shown that the soil must always contain certain elements to be productive. The absence of any of these causes inevitable sterility. Science determines the composition of the soil and its products, while experiment subjects the various crops to every condition of soil; and thus conjointly they have demonstrated the following substances to be strictly essential to the growth of vegetation, namely: Silica, Alumina, Lime, Magnesia, Oxide of Iron, Oxide of Manganese, Potash, Soda, Chlorine, Sulphuric acid, and Phosphoric acid; and every good soil contains organic matter also, which secures a supply of carbonic acid to the roots of plants. This fundamental fact in agriculture being known, it is of immense importance to the farmer. He learns that it is useless to apply to the soil any thing not contained in this table;

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and if his soil be a poor one, that it is probably due to the absence of some of these ingredients; or else to the proportion in which they are combined. The only exception to the statement just made that all fertilizers must consist of some of the substances above enumerated, is found in that class of compounds which will attract and combine with some of the elements of the air, and in this manner supply to the plant that which promotes its growth. There are thousands of chemical compounds, some of them often found in the soil, all of them within the reach of man; but not one of them is of service to the farmer unless contained in the classes mentioned above.

Such is the food of plants, and such the sources from which it is derived. The vegetable kingdom is inexorable; the fiat has gone forth; these and these only will it have. To the farmer it makes its appeal: Know my wants —listen to my voice—supply my demands—and your stores shall be increased; the husbandman shall not labor without his reward.

Science and practice unite in averring, that when the farmer cheats the soil, he cheats himself. Science asserts that when the soil gives up to the husbandman more than it receives in return, it grows poor; and experience, I have no doubt, will confirm the fact that it is equally unprofitable for the farmer. Furnish nature with the material, and she will manufacture for you without charge the valuable products you covet. Rob her of the means of labor, and her returns will be scanty. She cannot work a miracle. I believe that many of our farmers pursue a very impolitic course. That only is valuable in a farm which is capable of being converted into vegetation, or in some way aids in the growth of plants; and that is the most valuable portion which may in the least time be transformed into vegetable products. Every crop selects the most available part of the soil, and when removed from the field, the land is deprived of that part of itself which was especially use-

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ful in producing the crop. The soil, as it were, becomes culled; each season parting with its most valuable constituents; and in a short time all that is worth anything is gone. The man continues to own his land, but has lost his farm. It will usually take but a little while to dispose of all that is valuable in the soil; the farmer owns the same number of acres he purchased, on which he can pay his annual tax; but the farm he bought has been sold.

Chemical analysis has shown that the most useful constituents of the soil exist in the smallest proportion. Alumina, which is the base of clay, never forms an essential component of the plant; and the soil may contain a hundred times more silica than can ever get into the vegetable kingdom. But it is the potash, lime, phosphoric acid, and a few other compounds, which plants so much need, and which may so soon be exhausted.

Occasionally you find soils which are too rich in organic matter,—we may say never in the inorganic—the proportions may be unfavorable and hence injurious. Such soils need to have the elements, which are in excess, removed by judicious tillage; but this does not bear on the question under discussion. We refer especially to those elements which plants gather alone from the soil, and not so much to such as may be derived from the air as well as the soil; although these should never be exhausted—we suppose the soil to be in a proper state for raising crops.

I would lay it down, therefere, as a principle from which I would never depart, except in extraordinary cases, to restore to the soil as much as I had taken from the soil. This must be done as a whole, otherwise our agricultural interests are suffering; our cultivated land is diminishing in value. The usual methods of agriculture are exhaustive. We are defrauding the soil of that which belongs to it. This system cannot be followed with impunity. The farmer that robs the soil, robs himself. I do not think that this fact is so fully appreciated as it should be. Return to

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the bosom of nature what she has so generously lavished upon you, and like a bountiful benefactor, she will reward your gratitude by restoring your gift augumented many times in value.

Perhaps there are those who think they cannot afford to give back to the soil as much as they have received at her hands. But look at it a moment. You give to the soil the raw material; she works it up into useful products, and furnishes you with the result of her labor without charge. Could not the wheat grower afford to transport his wheat to the mill, if the miller would return it all to him in flour and bran? Would the cotton-grower be a loser by delivering his raw cotton to the manufacturer, if he could get it all again as cotton fabrics? Would the consumer lose by exchanging his worn out clothing for the same quantity of new? And would the farmer engage in a less profitable transaction by exchanging the early ingredients of the plant for the plant itself?

But the soil does more than this. You grant her the earthly ingredients, such as she furnished you out of her storehouse; she invites the carbonic acid and ammonia of the air, and the water with which the heavens have blessed her, to combine with these elements; and at the expiration of a few months, for every pound of earth received, she returns from fifty to a hundred, in the abundant crop she bears. This paying back a hundred fold, I have no doubt, will remunerate you for the labor bestowed. It is not easy to furnish the plant directly with a greater amount of carbonic acid than usually comes within reach of its leaves and roots, but you may provide it with those ingredients which will enable it to *absorb* and *retain* and *transform*, into its own structure, more of this carbonic acid than it otherwise could. The ash of plants comprises, usually, from less than 1 to 4 or 5 per cent. of the plants; the balance is made up from the air and water. The principal part of the animal kingdom, except the earthy material of the bones, is

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derived from the elements of the plant which come from the air. In enriching the soil, then, you not only provide that which becomes a constituent of the plant and animal, but which is the means of inducing other and important portions of the mineral kingdom to unite with it in building up the plant.

I would assume it then as a fundamental principle in agriculture, never to defraud the soil. Every farmer should adopt this rule, and make it as unalterable as the laws of the Medes and Persians. He should commence upon it in the first farming operations, and continue it through life. It is a very short-sighted policy to withhold from the soil its due, that your income may be greater this year; and thus render it almost certain that your income will be less the year following, and in a short time, nothing at all. The land must never be impoverished if the greatest gain be sought for a series of years. He that pursues a system of soil exhaustion is constantly drawing on his principal; and, of course, his interest must diminish also. As a farmer, he is getting poorer. But by a judicious and liberal policy, his land may be gradually enriching; his principal—his available capital in the soil—will be increased, and his annual income will be greater.

Science has established the fact, that the soil, by a process of weathering—by the action of the oxygen and carbonic acid of the air—undergoes a gradual change, so that a portion of what was before insoluble is rendered soluble, and fitted to nourish the plant. This is seldom sufficient to furnish the plant all the nutriment it needs, but if to this, should be added that which is taken from the soil by each crop, as it may be restored mostly in a soluble form, the land would gradually increase in fertility, and the farmer would discover that his revenue would increase in the same proportion. This, I think, was evidently the design of Providence. As the population augments, the soil should be more productive to meet the demands of the

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race. The world, agriculturally, should be growing richer and not poorer, and this gain in wealth should more than keep pace with the gain in population.

These remarks naturally suggest a few thoughts on the subject of manures.

In nothing do farmers generally manifest so little care, as in the prepartion, preservation, and application of manures. The most profitable fertilizers, if properly preserved, and of the most general utility, are what are called animal manures. That they are fitted to improve the soil, if applied in a proper state, there can be no doubt, when it is remembered, that their constituents have already formed components of plants. They came from the soil through the vegetation of a preceding season. They have proved their adaptation to vegetable growth. It would be useless then, to adduce arguments to show that all the products of the barnyard ought to be most carefully preserved.

Chemical analysis reveals the fact, that solid and liquid animal manures differ materially in their composition. Solid manures contain more of phosphoric acid, silica, lime, and magnesia, and also organic matter rich in carbon, which contributes to the formation of humus in the soil. Liquid manures contain more of potash and soda, sulphuric acid, common salt and nitrogen. It is evident that neither the solid nor liquid manures alone can constitute what may be called a "complete manure." Either alone would be incomplete, not only in not furnishing the soil all that had been removed from it, but more especially in not furnishing the several ingredients in the *proportion* in which they were received from the soil by the crops from which the manure was made. Use on your land the solid manure only, and you fail to apply the potash, soda, sulphuric acid and common salt, which had been taken from it. Throw away the solid manure and apply the liquid, and you lose the principal part of the phosphoric acid, lime, magnesia

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and silica. A soil, therefore, which for a series of years receives but one of these manures, must grow poor in those ingredients which belong principally to the other class.

Chemical researches have further shown, that when animal and vegetable substances undergo decomposition, their nitrogen and hydrogen combine, forming ammonia, and every farmer knows that this compound is a very valuable maure. Probably there is no one product of decomposition which is of so much service to the plant. It forms what is called a "forcing manure," pushing forward the growth of the plant in a rapid manner. Now the greater part of the nitrogen is removed from the animal system by the liquid manure, and whenever the latter is not preserved, of course the ammonia is lost. How very few farmers make any special provisions for preserving this most valuable class of manures. It is estimated on very satisfactory data, that the liquid manure of the horse is worth one-half as much as the solid, while the liquid manure of the cow is almost equal in value to that of the solid. Pound for pound, in their fresh state, the liquid is worth nearly twice as much as the solid.

Are these facts generally understood? Is not practice here very far behind the revelations of science? Are not millions of dollars—are not *many* millions of dollars wasted in this country every year by not preserving the liquid manure? This is one of the greatest wastes in our whole system of agriculture. There is need of a radical reformation in this regard. I earnestly invite the attention of all farmers to this subject. Cannot something be done to save the vast amount that is yearly being lost to the farmer in the net proceeds of his farm, and lost to the nation in its increase of wealth?

But I drop this subject a moment, to introduce another topic—the classification of plants.

The numerous analyses made, enable us to make a classification of plants on the basis of their chemical composi-

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tion. The ash of the grain abounds in phosphoric acid—it is the leading constituent, amounting to nearly one-half. The office of this compound is very evident, the bones of animals being composed mostly of phosphoric acid and lime. The grain also possesses a large amount of potash, but not equal to the phosphoric acid. The straw which supports the grain contains an abundance of silica. It is this which gives the straw its stiffness, its elastic strength. On soils deficient in silica the straw will lodge.

The grasses abound in lime. They contain, it is true, considerable potash and silica, but the lime being present in greater proportion than in other plants, it may be regarded as the chief characteristic.

The ash of the root crops, such as the potato and turnip, is rich in potash.

We may adopt, then, the following classification:

1st. The phosphoric acid plants—the grain.

2d. The potash plants—the root crops.

3d. The lime plants—the grasses.

And 4th, we may refer the different kinds of straw to a class by itself, as they are all characterized by an abundance of silica.

The lesson taught by this classification, no one can fail to discover. The phosphoric acid plants rapidly exhaust the soil of phosphoric acid, the potash plants of potash, and the lime plants of lime, while the straw draws heavily on the silica. Practical agriculture which disregards these facts in vegetable growth, cannot secure the greatest productiveness of the soil, and how can correct principles be applied unless first understood, and to chemistry alone are we indebted for disclosing the exhaustive tendency of the several crops, and hence dictating the proper manures to apply.

With these facts before us, we now return to the subject of manures.

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In failing to collect the liquid manure of his stock, the farmer suffers a loss in several ways.

1st. He deprives his land of that class of fertilizers which will act on the soil with the greatest rapidity. These manures are in a soluble form, and hence are ready for immediate absorption by the roots of the plant. They speedily undergo fermentation when exposed to the heat of the sun, and thereby become fitted to nourish the plant. Now, when two classes of manures possess the same fertilizing power, that is certainly the more valuable which can soonest be converted into vegetable products. In all business transactions men seek for speedy returns. A thousand dollars annual profit is surely better than though two years were required to secure the same income.

2d. He throws away the principal part of the nitrogen or azotized matter. I have already stated that this may be considered the most valuable of all the products of the barnyard, more especially from its forcing power. All classes of plants are pushed forward by it in a wonderful manner.

3d. There is a very great loss of potash and soda. Next to nitrogen compounds, these are our richest fertilizers. The root crops we have seen make potash their principal food among the earthly constituents of the soil, the cereals contain it in large proportion, while in the ash of the grasses it is more abundant than any other substances aside from lime and silica. And more than this, its proportion in the soil is always very small, and hence care is required to prevent exhaustion.

What, then, are the relations of the solid and liquid manures? The former act more slowly on the growth of plants, but abound in phosphoric acid, lime and magnesia, which have been appropriately named the "seed-forming substances of plants." The latter are very rich in nitrogen, potash and soda, which are designated as the "leaf and stalk forming substances of plants." Both are re-

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quired, it will be perceived, to nourish the whole plant in the highest degree. How unwise, then, to allow either to become wasted. The importance of these facts, I know is appreciated by our most thrifty farmers, but the large body of agriculturists in this country, I believe, have given but very little attention to them. It is a subject that demands their thoughtful consideration.

It should be a fixed principle with the farmer to consume as much as possible on his farm. I do not doubt it will be found profitable to retain all those products which are capable of being worked up into higher and more valuable forms, so far as it comes within the province of agriculture, and only send to the market that which cannot be readily thus transformed. In other words, the farmer should carry nothing from his land until it has reached that state in which it will command the highest price per pound; that the least amount of matter in proportion to the money received in exchange, may be carried away from the soil.

It will be observed, of course, that my remarks embrace general rules, and not every particular exigency that may arise from the condition of special localities, or the immediate wants of the farmer.

To illustrate what I mean by converting agricultural products into their highest and most valuable forms. One hundred pounds of pork is worth more than one hundred pounds of corn. It is worth at least as much as all the corn used in making the pork. But in producing the pork you save nearly all the earthy ingredients of the corn, and also the ammoniacal compounds which appear in the manure, and which can be returned to the soil, while, if the corn had been sold instead of feeding it up, all its ingredients would have been carried from the farm. Sell your hay in the market, and you dispose of all its constituents. Feed it to your stock and sell them; you save all that portion of the hay which appears in the form of manure.

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The ashes sold to the asheryman are worth vastly more in enriching the soil. Better use it to grow potatoes and wheat. The straw disposed of at a dollar per load, will bring a higher price from mixing with the soil in a proper state of decomposition, especially if it has before been prepared and used as fodder.

I repeat what I have before said, that everything which has come from the soil, and which is not designed for the market as a final product, should be restored to the soil. Allow me to ask a few questions. When an animal dies do you bury it or use it as a manure? What do you do with the contents of the pig-sty and hen-house? In killing hogs, what disposition is made of the hair, which forms so rich a fertilizer? What does the housewife do with the sweepings of the carpets—the wood abounding in nitrogen and sulphur, or the servant with the dishwater, containing soap so stimulating to vegetation, and fragments of food which readily decompose and enrich the soil? On washing-days, what is done with the soap-suds, which is worth, perhaps, on the farm, almost as much as the soap costs? What account is made of the bones left in the consumption of animal food? To what purpose do you put the saw-dust, the fragments of woolen rags, the ashes of your stoves and fire-places, and the products of outhouses? And lastly, what provision is made for preserving both the solid and liquid manures of the barnyard?

A great deal has been said for a few years past about compost heaps. They are serviceable in two ways:

1st. They furnish a receptacle for everything fitted to enrich the soil until it is convenient to apply it to the soil.

2d. That which is thrown into a compost heap may undergo decomposition and become more thoroughly fitted to nourish vegetation.

Every farmer should have a compost heap. Into this should be thrown all the refuse matter of the farm. The

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soot from the stovepipes and chimneys, the ashes, saw-dust, soap-suds, dish-water, grass dug from path or garden, hair and hoofs of animals, blood obtained by slaughtering, animals dying by disease or accident, bones, unless it is preferred to prepare them in another way for the soil, the manure of the pig-pen and poultry yard, the latter of which is too rich to apply directly to the soil where it is liable to come in contact with the grain, being nearly as valuable as guano, the deposits of the outhouse, and the solid and liquid manure of the barnyard, containing the partially decomposed straw, hay, corn-stalks, and other waste vegetable products; all of these should help to form the compost heap. With this may also be profitably mixed a quantity of muck. The latter usually possesses but slight fertilizing power, as it manifests but little tendency to undergo decomposition. But the fermentation of the animal manure will induce rapid decay and make it a speedy and valuable fertilizer. The manure and muck may conveniently be arranged in alternate layers. The liquid manure of the stable and barnyard being brought by a drain to a reservoir contiguous to the heap, may from time to time be pumped on the mass. The office answered by this liquid is two-fold:

1st. It is richly fertilizing and hence should be preserved.

2d. It undergoes decomposition very rapidly, and thereby excites the same change in the heap itself. The muck will absorb the principal part of the ammonia liberated; but the compost heap should always be sprinkled over with plaster, or some other appropriate compound, to absorb and retain the ammonia that might escape. One precaution should always be observed; never throw quicklime or other caustic alkalies into the heap, as they will be sure to drive ammonical salts off into the air. Farmers would find it profitable to sprinkle plaster quite freely in their stables, and over the manure of the barnyards, there-

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by converting the ammonia into a sulphate of ammonia, preventing its escape as a gas.

In selecting sites for barnyards regard should be had to the preservation of the manure. The surface should not be such as to allow the rains to wash off all the soluble portions of the manure; and the water should not be permitted to flow off from the yard except through a drain to the compost heap; neither should the rains which fall on the roof of the barn be allowed to run down on the manure, especially if pains be not taken to preserve all the washings of the yard.

Do farmers generally exercise all the care above indicated, to render available every otherwise useless product of the farm? Is there not often a disgraceful, and even ruinous waste? Would not a strict adherence to the principles stated, lay the foundation of wealth in many families which otherwise can never hope to gain a competency? No one can doubt that it is more profitable to save and use what a man has possessing really intrinsic worth, than to throw it away. And I am inclined to think we are not aware how great a loss is incurred by the daily neglect of these little things. Ordinarily, he that gives to the soil invests in a specie-paying bank which returns the principal with compound interest.

What sites are usually selected for barn-yards? Two principles, perhaps, generally direct in the choice of these yards, namely: beauty and convenience. These are certainly not to be disregarded, but there is another which should be paramount to both, and that is the means of preserving the manure. It is common to select a spot gradually descending from the barn, because it will be always dry. And it is dry because all the water runs off from the yard, carrying with it the whole of the soluble portion of the manure, while no drains or reservoirs are arranged for collecting these most valuable washings. Some enclose their yards on the bank of a stream, that the

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stock in the yard may always have free access to water. This would be well were it not purchased at too great a sacrifice. Usually, everything that can be dissolved is washed into the stream and carried off from the farm. How best to preserve what nature designed for preventing the exhaustion of the soil, is scarcely thought of. Whatever the rains can possibly dissolve is swept away; that which is volatile escapes into the air, and there is nothing left but a parched up, insoluble, unfertilizing mass, which the farmer carts on to his land; and as it is almost destitute of any stimulating power over vegetation, he concludes the manure costs more than it comes to, and if some one would volunteer to remove it from his yard and save him the trouble of hauling it on to the land, he would be thankful. Now such manure is nearly worthless. At the lowest calculation, three-fourths of its value is gone, and often, I doubt not, as much as nine-tenths; and this could all have been easily preserved, and that, too, at a trifling cost. Many farmers thus lose every year more than the value of the best yoke of oxen they own.

A few words in regard to the philosophy of keeping stock on a farm in order to preserve its fertility.

In this State, to a great extent, farming consists in raising wheat and sending it to market. Everything which will bring a price is sold; it is not retained to transform into more valuable products, but is disposed of as soon as it will command a price. This I have already shown is unwise. Every man knows that there is more of value concentrated in farm stock than in the same weight of provender which they consume, or provender containing an equal amount of earthy matter. Should the amount they had eaten be five times their weight, their value being increased in the same proportion, a large part of the provender eaten would be restored to the soil as manure, while otherwise it must have been carried from the farm. Who does not see that the farmer would be a gainer? The

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point, then, is as I have before stated it, that the greatest monied value is represented by the least quantity of soil, and hence the stock business leaves the land richer than produce business. There can certainly be no question in regard to the superior advantages of that system of agriculture which produces the least exhaustion of the soil; which, while it secures at least an equal income, contributes to render the land more productive than other methods.

Another advantage of stock raising consists in the fact, that the farmer thus possesses the means of converting the rough products of his farm more speedily into valuable manure. Apply straw to the land as a fertilizer, and it will require considerable time for it to undergo the decomposition necessary to nourish the plant; and in that undecayed state it can be used only on heavy soils; but when suitably prepared and fed to stock it becomes converted into concentrated manure, ready to promote in the highest degree the growth of vegetation. In some places in Europe, stock are kept expressly for the manure made, believing that the increased value of the manure equals the cost of feed. The manure is richer, containing more ammonia, and is also more speedy.

But will not a system of rotation of crops dispense with the necessity of applying manures? Too much can hardly be said in favor of rotation of crops. The reasons for it are plainly discovered in the chemical classification of plants which I have already given. Make a heavy draught on any one ingredient of the soil for several years in succession, and unless it be very abundant it will be exhausted. Raise wheat for a few years continuously on the same piece of land, as is sometimes done, and the soil becomes speedily deprived of its phosphoric acid. The grain soon shows evidence of an inferior crop, because it has already removed the greater portion of the available part of the constituents on which it lives. Potatoes prefer potash,

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and hence the soil must part with an undue proportion of this alkali, if required, frequently to produce a crop of potatoes. And thus it is with all other species of vegetation, for each one has its preferences; it will not absorb in equal proportion all the ingredients of the soil. By a rotation of crops you vary the proportion during successive years in which the elements of the soil are removed; and hence the land remains productive a longer period of time.

And more than this, should the soil refuse to produce a good crop, as potatoes, for illustration, this year it does not follow that it would not yield a good crop five years hence, although no manure should be applied to the land to enrich it. Potash is generally very soluble; but should you boil a specimen of soil in water, you would dissolve out only a part of its potash, the residue would be insoluble from its combination with silica. But expose that residue to the action of the air for two or three years, and then boil it again, you would be able to dissolve some more of its potash. It had been made soluble by exposure to the atmosphere. Thus if the land could not produce two good crops of potatoes during successive years because the plant could not get all the potash it needed, should the soil be allowed to rest for a time, or some other crop requiring but little potash be raised, this alkali would become gradually dissolved, and hence in time the soil might raise an abundant crop of potatoes. This principle applies to all the products of our land. It is highly to the interest of the farmer to vary his crop as much as possible, not only not to raise the same kind of crop on land two years in succession, but also he should not raise the same class of crops if he can help it. Wheat, corn, oats, rye, barley, &c., are similar in their composition, they make a similar demand on the soil, and therefore should not be raised successively on the same piece of land unless the soil has

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a peculiar composition. Not like, but unlike classes should rotate.

Every soil has more of wealth for the farmer who will consult its code of laws, and take each year the gifts it offers, and not seek to force it to give what it will not. If the soil has an abundance of soluble lime to dispose of this year, take the lime; if more of potash, take the potash; but if more of phosphoric acid, take the phosphoric acid. Endeavor to find out what it has in reserve for you, and each season accept its largest instead of its smallest gift.

But to recur to our original question: Does the system of rotation of crops dispense with the necessity of applying manures? We think not. By a rotation of crops, the farmer is not enriching his soil, he is only making it hold out the longer. He has commenced a system of general, instead of special exhaustion. He does not remove all the phosphoric acid at once; he takes only a part at a time, removing something else in its place. *But each crop takes from the soil all the vast amount of earthy material embodied in its composition*, and unless restored by manures, the land must be so much the poorer. By rotation of crops no earthy constituents are given back; and aside from the supply of organic matter obtained by occasionally ploughing under a crop, as clover; there is but one source from which the soil can be enriched. Those plants, like the clovers, which run down deep into the subsoil, absorb there the soluble earthy matter within the reach of the roots, and bring it up into the stalk and leaf to be mixed with the surface soil when the crop is ploughed under. This, it will readily be perceived, cannot afford a very abundant supply of food for the plant. Farmers should by all means adopt a system of rotation of crops as strictly essential to the highest productiveness of the soil; but it should not be made an excuse for withholding from the soil its due. Give back to the land occasionally all that originally belonged to it, and then, by adopting a rational

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system of rotation, based on the requirements of the several crops, you will realize the greatest productiveness of the soil. There will usually be as much profit derived from manuring with this rotation as without it.

Special manures have of late attracted a good deal of attention. They have been justly praised, and they have been justly condemned. Their action is special, and as such they may at times be of much use; but as general fertilizers, they must fail. Superphosphate of lime, for instance, is valuable whenever the soil requires the elements which compose this manure; but useless if it does not supply the constituents the land needs. A soil deficient in potash only would not be improved by the application of superphosphates, because this class of fertilizers contains no potash; but if the soil needs phosphoric acid, there is no better form in which it can be supplied. Now I do not doubt that this compound has at times been extremely fertilizing; it will always do good if the soil is in want of any of the constituents which enter into its composition, unless other necessary ingredients also should be absent from the soil. Land that is subject to general exhaustion cannot be restored by special manures; nor can special exhaustion be removed by special manures unless such manures supply the required ingredients. It would be folly to think of fertilizing with lime, land that needed only potash; or enriching with superphosphates when it is silica that is wanting; or even supplying ammonia when the soil is barren from a lack of mineral ingredients; or providing the mineral, when it is poor in nothing but organic matter. One man experiments with superphosphate of lime, and meets with wonderful success, and publishes to the world that this is just what farmers want. Apply this and you will be sure to have an abundant crop. *It is false.* Another man tries it without benefit, and pronounces it a humbug. *This is also false.* A knowledge of the chemical composition of the soil, and the composi-

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tion of the crop raised, would have explained the cause of the result in each case.

Experiments are often worthless, because of the ignorance of the experimenter. What fact can be established in regard to the chemical requirements of the plant, if different fertilizers are applied without any knowledge of the composition of the soil experimented on? It would appear to be a self-evident truth that no principle could thus be settled in perfect disregard of the original composition of the soil. Much has already been done by the joint labor of science and experimental and practical agriculture; but much remains yet to be done which can only be accomplished by their combined efforts. The researches of chemical science enable us with a good degree of accuracy to arrange plants in classes depending on the composition of their ash; but this leaves a very wide margin. The composition of each plant is not absolutely fixed: it will use more or less of each element, depending on the supply. And yet doubtless there is a proportion which will just meet the requirements of the plant. Who can tell just how much potash and soda and lime and phosphoric acid wheat must have to secure its most perfect development? Who can tell just the proportion of ingredients required by the corn for its most perfect growth, both as to yield and nutritive value? Who knows just the ratio of elements adapted to the highest development of the oat? Is there one of all the plants cultivated by man whose exact wants have been accurately determined? Can any man make a perfect soil for any of the several classes of plants? But is it not desirable that a close approximation be made to the solution of these problems in vegetable growth? And how can it be done unless science and practical agriculture work hand in hand? Science cannot accomplish the work alone, nor can experimental agriculture. They must be bosom friends. It is the noblest office of science to be useful, to promote the

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happiness and prosperity of the race; and agriculture both needs her aid, and may contribute to her success.

It is to be hoped that the interest which is now being manifested in different parts of our land in the establishment of agricultural colleges, may ultimately in part reap its reward in the solution of many of these important questions in agriculture. But it must be the labor of many years, and will require hundreds, and it may be thousands of researches to secure near approximations to the truth. And it cannot be the work of one man, a life time would be too short; there must be a cordial co-operation of all who are interested in unfolding the true system of practical agriculture, in deciding the exact condition of vegetable growth. And experiments to be profitable must be prosecuted with the utmost care. The light of past experience must not be disregarded. Admitted truths must serve as the basis of future operations. Strict system must be observed, and nothing must be done at random. A clear-sighted discrimination must be exercised in reading the results of each experiment; and no general fact must be predicted on narrow premises. It often requires wisdom to correctly interpret the teachings of experience.

I know of no field of study where there is so much to learn as in agriculture, where the most profitable labor depends so much on the strict application of so many important principles. Every result is based on natural law. The farmer is all the time applying the principles of science whether he knows it or not. He cannot plant a potatoe, or hoe a hill of corn or sow a handful of wheat, without being subject to the laws of science. And our best farmers are the most successful because they are the most scientific. In many cases they may not understand the force of the scientific terms we would apply; but they follow scientific methods. They may not have studied the conditions of the law, but they observe it in practice. He then is the most scientific farmer who succeeds the

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best; his labor conforms most strictly to the demands of nature's laws; *and he succeeds the best because he is the most scientific.*

Let no man condem that which only is entitled to the application of scientific farming. Condemn as much as you choose the vagaries, and follies, and ignorance of those who may pretend to teach the application of science to agriculture, but condemn them because they are *not* a part of science; but hail with joy whatever of light the researches of scientific men may throw on what would otherwise be the mysteries of farming. And there is but one way to know whether the numerous theories proposed are true or not, and that is to study science and to study practice, study theory, and study experience, make yourselves acquainted with nature's laws and their application; and you will wield a mighty power not possessed by the ignorant. "Knowledge is power" in agriculture as truly as in any other department of business, or in any relation in life. Grasp the "sword of truth," and nature will yield to your sway.

I address this day an assemblage of noblemen—noble because of the position they hold in the industrial world. On the farmer depends the welfare of the race. Said the world renowned Liebig: "Perfect Agriculture is the true foundation of all trade and industry—it is the foundation of the riches of States." Agriculture is the substratum of all wealth; it must here take its origin, and on this it must build. This is indeed the Atlas that bears up the world. Is it not time that the farmer understood the nobility of his calling; and inspired by the momentuous results of his labor, should he not redouble his efforts in promoting the prosperity of the race? Should he not show his control over nature by compelling her to yield more bountifully to his demands? Much has been accomplished within a few years past in some departments of farming, as your annual fairs eloquently testify, but that more glo-

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rious results are in the future, we firmly believe; and the great victory of man over nature must be gained by the joint labor of science and practice.

I have not sought in this address to please the fancy or delight the ear. I have chosen to look into the common and every day matters of the farm; to discuss briefly a few of the numerous questions which crowd themselves on the attention of the farmer. What are facts, practical facts, established by experience and confirmed and explained by science? How much there is to learn? How many mysteries now darken the pathway of the farmer! and how deeply interested are we all in developing the truths which here lie buried! In this are more hopes entered than in all other departments of business. Cheapen the cost of raising wheat or other products, and you benefit not the farmer only but every man who is dependant on his labor for his income. What mighty interests are connected with agriculture! interests which swallow up all trades and pursuits! A thousand millions of human beings are dependent on the products of the soil. To this magnificent enterprise, to which is allotted the office of sustaining the population of a world, should science lend her utmost aid. In this should the mightiest thoughts be enlisted. On this altar should be consecrated the grandest energies of the race. Science and practice, learning and experience, all the multiplied appliances within the reach of man should be made to combine here to develop wealth far surpassing in richness the gold mines of the Pacific. The prosperity of the world is centered in her agriculture.

Statement of the Receipts and Actual Disbursements of the Society for 1858.

RECEIPTS.

Amount received from former Treasurer,	$ 24	55
" " for membership tickets,	180	50

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Amount received for gate fees,.....		$84 88
" " from County Treasurer,.....		75 00
Total of receipts,.....		$364 93

DISBURSEMENTS.

Amount of premiums paid,.....	$242 75	
Amount of all other disbursements, including labor upon Fair Grounds, printing, &c.,.....	97 44	
Total of expenditures,.....		$340 19
Amount remaining in the Treasury, Jan. 1, 1858,		$24 74

IONIA COUNTY.

No report has been received from this County.

JACKSON COUNTY.

No report has been received from this County.

KALAMAZOO COUNTY.

EXECUTIVE MEETING.

A meeting of the Executive Committee of the Kalamazoo County Agricultural Society, was held at the office of the County Clerk, on Tuesday, the 28th September, 1858, to complete the business of the late Fair, and for the adjudication of all matters coming properly before them.

The Treasurer, Hiram Arnold, Esq., reported upon the receipts of the late Fair, as follows:

1011 membership tickets (equalized) at 50 cents,	$505 50
1995 single " " at 16 cents,	297 35

($1 92 lost in sale of tickets, and discounted.)

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170 team tickets (equalized) at 20 cents,.....		$42 30
Rent of ground for eating houses, (2 at $20 each,) ($20 of which is yet unpaid.)		40 00
		$885 15
Discount on uncurrent funds,.....	$0 70	
Subscription not yet paid,.....	5 00	
		5 70
Total, ...		$879 45

On motion, report accepted and ordered to be put upon the minutes.

On motion, the following accounts were taken up and passed, as follows:

H. Heydenburg, services, night watch,.....	$ 7 50
J. S. Vernor, use of tent.....	10 00
Wm. Glover, night watch, ...	2 00
H. Arnold, account for provender,.....	15 88
Chas. S. D'Arcambal, services in Sec'y's office,...	7 50
S. E. Hall, " " ...	3 00
H. Arnold, paid for help in office,.....	12 00
Ostram & Clipfel, tending gate, &c., ...	10 50
Fish & Merrill, mill-feed, &c.,.....	7 36
A. D. Allen, freight on tent, &c., ...	7 28
A. Randall, police, ...	3 00
George Dodge, police,.....	3 00
H. Meyer, police, &c., ...	4 00
H. Rolling, draying,.....	3 50
Chas. Wadhams, work on grounds,.....	16 00
W. H. Cobb, lumber and labor,.....	19 88
F. Woodham, sprinkling streets,.....	4 00
Potter, Gale & Parsons, sundries,.....	10 18
Gibson & Wagner, "	1 38
A. E. Bartlett, "	3 43
B. C. Ensign, fitting grounds,.....	4 00
Babcock, Cobb & Co., sundries,.....	3 68
Joseph S. Davidson, police,.....	3 00

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Gazette Office, printing,	$24 35
Telegraph " "	20 00
Frank Little, services as Secretary,	30 00
" sundries furnished,	6 92
F. Ransom, sundries furnished,	3 37
E. R. Miller, " "	2 00
H. Arnold, nails,	1 00
" Governor's expenses,	5 00
" paid team, gate-keeper and assistants,	12 00

On motion, reversed the premiums reported upon stallions for all work, Class No. 1, by giving the first premium to E. Landon, and the second to A. Healey.

On motion, the following persons were chosen a standing committee to audit accounts, and special, to settle with late Treasurer, to wit: W. H. Cobb, J. Milham and Frank Little.

Voted: That all premiums awarded by the Society, previous to the Fair of 1857, be hereby rendered void, and of no force.

Voted: That this Society tender its most hearty thanks to the various committees and citizens that lent their cheerful and effectual aid in arranging and carrying out the preparations and celebration of the late Fair.

Voted: That the thanks of this Society are due and cheerfully given to the President, Mr. E. R. Miller, and the members of the Executive Committee, particularly Messrs. Bair and Cobb, for their arduous labors in behalf of the association, preparing for the anniversary.

On motion, adjourned.

ELI R. MILLER, *President.*

FRANK LITTLE, *Secretary.*

—

At a subsequent session of the Executive Committee, chosen at the late Fair, just closed, it was voted as follows, to wit:

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All awards of premiums made at the Society's Fair for 1858, must be called for at the Secretary's office, within the space of six months from the publication of this order, and the balance remaining upon the books at the expiration of six months, will be cancelled, and will revert to the Society.

(A true copy.)

FRANK LITTLE, *Secretary.*

Kalamazoo, Sept. 30, 1858.

—

The Thirteenth Annual Fair and Cattle Show of the Kalamazoo County Agricultural Society, was held upon the grounds of the Society, at Kalamazoo, September 22d, 23d and 24th. Governor K. S. Bingham delivered the Annual Address.

The following persons were chosen as officers of the Society for the ensuing year, to wit:

President—F. W. Curtenius.

Secretary—Frank Little.

Corresponding Secretary—Amos D. Allen.

Treasurer—Hiram Arnold.

Executive Committee—E. T. Lovell, John Milham, V. C. Smith, W. H. Cobb, P. Vradenburgh.

Vice Presidents—A. H. Hill, Alamo; Joel Lillie, Cooper; Jesse Earl, Comstock; John B. Ide, Charleston; L. W. Lovell, Climax; Silas Hubbard, Kalamazoo; M. Kingsley, Oshtemo; J. Eastland, Portage; L. T. Earl, Pavillion; Thomas Patton, Prairie Ronde; S. Howland, Ross; E. O. Humphrey, Richland; J. N. Neasmith, Schoolcraft; Chas. Brown, Brady; L. G. Hunt, Texas; A. Halsey, Wau keshma.

The above is a correct copy of the awards of premiums and the election of officers at the late Fair of the Kalamazoo County Agricultural Society, held at Kalamazoo, September 22, 23, and 24, 1858.

ELI R. MILLER, *President.*

FARNK LITTLE, *Secretary.*

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KALAMAZOO TOWN AGRICULTURAL SOCIETY FOR THE IMPROVEMENT OF THE BREED OF HORSES.

To the Secretary of the Michigan State Agricultural Society:

The undersigned, officers of the "Kalamazoo Town Agricultural Society for Improving the Breed of Horses," beg leave to make the following Annual Report to your Society, as by statute required:

First Fair held at Kalamazoo, October 12, 13, and 14, 1858, with the following receipts and expenditures:

RECEIPTS.

To cash received on subscription from citizens,		$1,159 00
" " for entries of stock,.....		554 00
" " for use of grounds,.....		97 25
" " at gate and for use seats,....		2,178 65
Total receipts,.....		$3,988 90

DISBURSEMENTS.

Amounts paid premiums in gold, as per exhibits No. 1, 2 and 3, enclosed,.....	$1,335 00	
Am't paid for temporary building,.	571 00	
" use ground and fitting up,	145 50	
" for services,.....	318 99	
" for printing, postage, &c.,	252 02	
" for board com. and police,	120 60	
" Evans, 1st paym't on farm,	1,000 00	
		$3,693 55
Balance cash on hand,.....		$295 35

J. K. WARD, *Pres., pro tem.*
W. G. PATTISON, *Treas.*,
GEO. F. KIDDER, *Secretary.*

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LIST OF PREMIUMS

Awarded at the First National Exhibition of Horses, held by the "Kalamazoo Town Agricultural Society for improving the breed of Horses," on the 12th, 13th and 14th of October, 1858.

CLASS I.

Thoroughbred Stallions.

1st premium, Rubles & Royce, Beloit, Wisconsin, "Princeton,".....$150 00
2d prem., F. Williams, Ypsilanti, "Stone Plover,". 100 00

—

CLASS II.

Thoroughbred Mares.

No award for want of pedigree.

—

CLASS III.

Stallions for General Use.

1st prem., A. C. Fisk, Coldwater, "Hero,".....$100 00
2d " F. E. Eldred, Detroit, "Glen Black Hawk," 50 00

—

Draft Stallions.

1st prem., G. Hodges, Charleston, "Norman Tiger,".$60 00
2d " A. Healy, Kalamazoo, "Duke of York,".. 30 00

—

CLASS IV.

Stallions, three years and under five.

1st prem., D. B. Hibbard, Jackson, "Harry Lathrop," $50 00
2d " J. Parrish, Yankee Springs, "Frank Porter,"..... 25 00

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CLASS V.

Stallions, two years and under three.

1st prem., Joseph Frakes, Schoolcraft, "Jimmy Lancaster," $30 00
2d prem., Ed Trudeau, Niles, "Flying Cloud." 20 00

—

CLASS VI.

Mares with foal by side.

1st prem., H. M. Wright, Coldwater, "High Flyer," . $50 00
2d " A. S. Berry, Adrian, "Fanny," 30 00
3d " F. E. Walbridge, Kalamazoo, "Kate," ... 20 00

—

CLASS VII.

Fillies, 2 years and under 4.

1st prem., F. V. Smith, Coldwater, "Gypsy," $30 00
2d " A. Case, Bedford, ... 20 00

—

CLASS VIII.

Fillies, one year old and under two.

1st premium, J. V. Spencer, Battle Creek, ... $20 00
2d " E. H. Davis, Kalamazoo, "Puss," 10 00

—

CLASS IX.

Colts, two years old and under four.

Premium, F. V. Smith, Caldwater, "Elder Sniffles," $30 00

—

CLASS X.

Colts, one year and under two.

1st premium, P. C. Lown, Florence, "Rudolph," ... $20 00
2d " F. E. Walbridge, Pavillion, "Mentor," 10 00

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CLASS XI.

Colts under one year.

1st premium, F. W. Dale, Schoolcraft, "Black Hawk," $20 00
2d " F. E. Walbridge, Pavillion, "Doctor,". 10 00

—

CLASS XII.

Matched Horses—16 hands and over.

1st premium, C. T. Gorham, Marshall,.....$50 00
2d " B. W. Phillips, Allegan,..... 25 00

Fourteen Hands and under Sixteen.

1st premium, B. M. Austin, Kalamazoo,.....$50 00
2d " E. O. Humphrey, Richland,..... 25 00

The committee also wish to make favorable mention of the horses of T. Swift, Albion, ruled out on account of one being a stallion.

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CLASS XIII.

Fancy Matched Horses.

No award for want of merit.

—

CLASS XIV.

Family Horses—(Roadsters.)

1st premium, Hiram Arnold, Kalamazoo, "Major,".$30 00
2d " A. O. Hyde, Marshall, "Geo,"..... 20 00

—

CLASS XV.

Gentlemen's Driving Horses.

1st premium, J. D. Misner, Burr Oak,.....$30 00
2d " J. C. Deyer, Kalamazoo,..... 20 00

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CLASS XVI.

Ladies and Gentlemen's Riding Horses.

Ladies', F. V. Smith, Coldwater,.....$15 00
Gentlemen's, H. Mower,.....15 00

—

CLASS XVII.

Farm or Draft Horses.

1st premium, A. C. Prutzman, Three Rivers,.....$30 00
2d " Orl Davenport, Kalamazoo,..... 20 00

—

CLASS XVIII.

Single Farm or Draft Horses.

1st premium, S. R. Wheeler, "Col.,".....$10 00
Dis. " Edward Hodges, "Tige,"..... 5 00

—

CLASS XIX.

Stallions—(Roadsters.)

Dis. Prem., A. C. Fisk, Coldwater, "Moscow,".....$10 00
" T. Bonfish, Ohio, Prince Churbs,..... 10 00
" A. C. Fisk, Black Prince,..... 10 00

The following discretionary premiums were awarded by the officers on recommendation of the Judges, they being ruled out for irregular entries:

J. D. Bixby, brood mare "Kitty,".....$25 00
P. C. Lowne, Florence, brood mare,..... 10 00
B. Schammerhorn, Hudson, draft stallion,..... 20 00
W. C. Wells, Lockport, Ill., 3 year old stallion,.... 20 00

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KENT COUNTY.

R. F. JOHNSTONE, ESQ., *Sec'y Mich. State Ag'l Society:*

DEAR SIR—I herewith enclose to you a brief report of the transactions of Kent County Agricultural Society for the year 1858. Although the financial embarrassments which we in common with all other portions of the country, particularly the west, have experienced in no small degree, have cramped and retarded our operations, still the interest of the community in those objects which the Society are laboring to promote has in no measure abated, and our success has fully equalled our expectations. The regular and occasional meetings of the Executive Board have been well attended, their action harmonious, and such, we think, as to meet the approbation of the friends of the Society.

It having become evident that the business of the Society could not be done much longer under the original articles of association, made Dec. 27th, 1855, according to the requirements of the statute, under which said association was organized, for the reason that the number of the executive officers of said association would be larger than is permitted by said statute, in the spring of 1857 amended articles of association were adopted, limiting the number of officers to a President, Secretary, Treasurer, and five Directors, who constitute an Executive Board to manage the concerns of the Society, a majority of whom constitute a quorum. At a meeting of the Executive Board, March 8th, 1858, a new code of By-Laws were adopted, harmonizing with said amended articles of association. A committee was also appointed to prepare a Premium List and report at the next regular meeting of the Board, at which time, June 14th, their report was accepted, and after some amendments, adopted and ordered published in the daily and weekly newspapers published in the county.

The grounds which had been heretofore occupied by the Society having passed out of the hands of the original proprietor, and the fences in part removed, it was deemed

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very desirable to make such improvements on the land owned by the Society, to which reference has been made in former reports, as would enable us to occupy it at the approaching Fair. As there were no funds in the treasury, some effort was made to sell life memberships, for the purpose of raising means to make the necessary improvements, but as no one felt disposed to leave his business at that season of the year and devote the necessary time to that object, the project was abandoned for the time being, and it was decided to temporarily fit up and occupy the old ground, although of limited extent, and poorly adapted to that purpose. The Tenth Annual Fair of the Society was accordingly held on the old ground in the City of Grand Rapids, on the 5th, 6th and 7th days of October. The first day which was a very fine one, and the forenoon of the second were devoted to entries, after which the several committees made their examinations. The number of entries in the several Classes were as follows:

Durhams,	12
Devons,	24
Grades and crosses,	29
Natives,	25
Fat cattle,	6
Horses,	95
Sheep,	28
Swine,	10
Poultry,	10
Tools and implements for the farm,	33
Mechanics, other than the above,	42
Leather, boots and shoes, &c.,	13
Butter, cheese, sugar, honey, bread and flour,	34
Domestic arts,	29
Fancy and ornamental work,	43
Paintings, Drawings and Daguerrean work,	51
Flowers,	10

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Seeds and vegetables, ...116
Fruit, ... 29

Making the whole number of entries.....639
being 55 more than on any previous year.

The attendance on the second day was quite large, although the weather was somewhat unpleasant, being cloudy with occasional light showers of rain, which deterred many from visiting the ground.

Much rain fell during the night of the 6th, accompanied with high winds, and the morning of the third day opened most unpropitiously. It was very windy, and uncomfortably cold. Animals shrunk and shivered in the winds, and men sought the lee-side of fences and buildings for protection. Still many visited the ground in the forenoon of that day, though but few in comparison with what would have done so, had the weather been pleasant. In the afternoon we were obliged to leave the ground on account of the inclemency of the weather, and adjourn to Luce's Hall, where, at about 2 o'clock P. M., the Society was called to order by the President, who made a few appropriate and timely remarks touching the present condition and future prospects of the Society. The reports of the Viewing Committees were read by the Secretary; then a song by the Glee Club, after which the Annual Address was delivered by Thomas D. Worrall, Esq.

The Society proceeded to the election of officers for the ensuing year, which resulted as follows, to wit:

President—J. A. Simonds, Paris.

Secretary—L. S. Scranton, Grand Rapids City.

Treasurer—G. C. Fitch, Grand Rapids City.

Executive Committee—Hiram Darling, Paris; Wm. W. Anderson, Walker; E. W. Knapp, Grand Rapids; William Birdsall, Alpine; G. H. Dennison, Cascade.

A vote of thanks was tendered to the retiring board of officers for the faithful discharge of their duties, to the

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Speaker, Glee Club, and also the Military, who were deterred from visiting the Fair Ground by the inclemency of the weather, which caused a change of programme, and all others who aided in giving interest to the occasion.

Our Tenth Annual Fair exceeded any former one in the number and quality of Horses, Cattle and Sheep; also in the display of the Fine Arts; while in all other departments (Fruit only excepted, for which it was a very unfavorable season,) the display fully equalled, if it did not exceed that of the previous year, showing a steady advance and improvement in those objects which the Society was organized to promote. The receipts of the Society from the proceeds of the Fair were about $41 less than last year. Had the last day been a pleasant one, the throng from the City would have been large, and the receipts much greater, and would probably have exceeded those of the previous year.

The report of the Treasurer for the fiscal year shows the

amount received from proceeds of Annual Fair,..	$486 35
One life membership sold,.....	10 00
Amount voted to the Society by Board of Supervisors,.....	232 00
Total,.....	$728 35

The expenses incurred during the year have been:

For lumber and labor fitting up ground,	$54 83	
Paid police,.....	54 00	
For taking down and removing fences and buildings to new Fair Ground,...	30 00	
Forage, printing, &c.,.....	66 75	
Premiums awarded,.....	329 75	
Total,.....		535 33
Leaving a balance of.....		$193 02

to apply on the indebtedness of the Society.

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At a special meeting of the Executive Board on the 6th day of November, called for the purpose of taking some action in relation to improving the new Fair Ground, it was voted that an effort be made to raise funds for that object by the sale of life memberships. Mr. O. R. L. Crozier was immediately employed as agent of the Society to canvass the county for that purpose, and was authorized to receive in payment lumber, posts and labor, (nor refuse cash;) also to take notes or obligations payable on demand or on the first day of April or October next, out of which he was to be allowed a commission of ten per cent. when collected, in payment for his services. He entered at once upon the work, and at the next meeting of the Board held December 13, 1858, reported about sixty already sold, although but a small portion of the county had then been visited. Encouraged by the success which had thus far attended the effort, the Board resolved to proceed at once to make arrangements for fencing and grubbing the land and preparing a trotting track, the expense of said improvements to be defrayed entirely from the avails of life memberships. Mr. J. A. Simonds was appointed a committee to superintend the improvements and authorized to make and execute contracts, if necessary for that purpose. (The said improvements are now, April 1, 1859, all under contract, and the work progressing.) The By-Laws were also so amended as to admit the citizens of the eastern tier of townships in Ottawa county, to become members of our Society. Also that individuals offering ballots at the annual election of officers may be required to exhibit their certificates of membership when they offer their ballots; and that a refusal to do shall exclude them from the right of suffrage. It was also voted that all life members be admitted to all the regular Fairs of the Society.

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A brief history of Kent County, with a description of its soil, timber, production and natural resources, furnished by John Ball, Esq., of the City of Grand Rapids, one of the early settlers of the county, may be found in the report of the Transactions of the State Agricultural Society for 1854, to which we would refer all those wishing information in regard to our county. A communication on the subject of Plaster, from the same person, in the Transactions of 1856, will be found interesting to all, and especially to those who use it as a fertilizer, (and what good farmer does not,) and gives one a good idea of the situation of our quarries, and the manner and success with which they had been worked up to that date. Since that time the facilities for its manufacture and transportation have been greatly increased, and large quantities ground and in the rock are shipped to the principal towns along the lines of the railroads that traverse the State, and to Indiana, Illinois and Wisconsin. There are two mills on the Detroit and Milwaukee Railroad, one at Fentonville and the other at Clarkson, which are supplied with the rock from this place. The amount of plaster sold yearly for the past two years is estimated at about twelve thousand tons, and the number of barrels of stucco about eight thousand. The supply is unlimited, and the facilities for manufacture will doubtless keep pace with the demand.

For the information of farmers in the central and Southern part of the State, we append a circular, with tariff of prices here, and on the lines of the Central and Southern Railroads.

E. M. BALL,
Secretary.

MICHIGAN CENTRAL RAILROAD CO.

To induce the more free use of this very superior article of Plaster along the line of, and country tributary to this

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road, the proprietors of the Grand Rapids Plaster Beds have consented to reduce their prices to an extent, that with the reduced rates of transportation, it is hoped will place its use, in large quantities, within the reach of all.

The rates from Detroit to all points on the line are reduced, (as near as possible to ascertain it,) to the bare *cost* of handling and hauling, which is fixed at *one cent per ton, per mile*, but not less than 50 cents per ton, for short distances—when transported in lots not less than 10 tons, or even car loads, when in larger quantities.

When delivered in smaller lots than 10 tons, one and a half cents per ton, per mile, and not less than 60 cents per ton, for short distances. Plaster, when offered for transportation Eastward, in lots of 10 tons or upward, will be taken at one and a half cents per ton, per mile, but not less than 60 cents per ton, for short distances—in smaller quantities at one-half second class rates.

Attention is invited to the following communication from S. Wood & Co., and Hovey & Co., of Grand Rapids:

GRAND RAPIDS, February 14, 1859.

R. N. RICE, *Sup't M. C. R. R.:*

DEAR SIR—We will deliver Plaster at the depot of the Detroit and Milwaukee Railway in this city, upon the following terms:

Ground Plaster to parties furnishing sacks,	$3 25	per ton.
" " in barrels,.....	4 75	" "
Plaster in the Rock,.....	2 50	" "

Our motives in delivering it at these extremely low rates is to induce a larger consumption of the article by our farmers, and to introduce it throughout the Western States; and we would here assure the public that these rates shall not be changed during the present year.

Messrs. Trowbridge, Chipman & Rood, Commission Merchants, of Detroit, have been appointed sole agents for the sale of our Plaster, upon the terms and conditions above

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mentioned. All orders for the same addressed to them at Detroit, accompanied with the cash, will be promptly attended to.

S. WOOD & CO.,
HOVEY & CO.

—

Grand Rapids Plaster Tariff, showing its cost in lots of Ten Tons and upwards, at Stations on M. C. R. R.—the transportation from depot at Grand Rapids to M. C. R. R. depot at Detroit, being $2 30 per ton.

Total cost at all points between Detroit and	Plaster, in the Rock, per ton.	Ground, to purchasers furnishing their own sacks, per ton.	Ground, in barrels, per ton.
Dexter,	$5 30	$6 05	$7 55
Chelsea,	5 34	6 09	7 59
Franciscos,	5 41	6 16	7 66
Grass Lake,	5 45	6 20	7 70
Leoni,	5 48	6 23	7 73
Michigan Centre,	5 52	6 27	7 77
Jackson,	5 56	6 31	7 81
Sandstone,	5 62	6 37	7 87
Parma,	5 66	6 41	7 91
Concord,	5 69	6 44	7 94
Albion,	5 75	6 50	8 00
Marengo,	5 81	6 56	8 06
Marshall,	5 87	6 62	8 12
Ceresco,	5 92	6 67	8 17
Battle Creek,	6 00	6 75	8 25
Augusta,	6 10	6 85	8 35
Galesburgh,	6 14	6 89	8 39
Comstock,	6 19	6 94	8 44
Kalamazoo,	6 23	6 98	8 48

The cost of Plaster to points West of Kalamazoo may be got at by adding the rate of this road (1 cent per ton per mile) to the cost of it at depot at Detroit.

The figures in the above table are given as a matter of information to purchasers, and this Company will not be responsible for changes that may be made in prices of Plaster at Grand Rapids, or rates of freight upon the Detroit and Milwaukee road.

R. N. RICE, *General Sup't.*

M. C. R. R. Office, Detroit, Feb. 17, 1859.

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MICHIGAN S. & N. I. RAILROAD.

Grand Rapids Plaster Tariff, showing its cost in lots of Ten Tons and upwards, at Stations on Michigan Southern and Northern Indiana Railroad. The transportation from depot at Grand Rapids to M. S. & N. I. R. R. Detroit, being $2 30 per ton.

Total cost at all points between Detroit and	Plaster, in the Rock, per ton.	Ground, to purchasers furnishing their own sacks, per ton.	Ground, in barrels, per ton.
Ecorce,.....	$4 94	$5 69	$7 19
Wyandotte,.....	4 97	5 72	7 22
Trenton, ...	5 01	5 76	7 26
Huron,.....	5 07	5 82	7 32
Monroe,.....	5 21	5 96	7 46
Toledo,.....	5 45	6 20	7 70
Sylvania, ...	5 55	6 30	7 80
Knights, ...	5 66	6 41	7 91
Blissfield,.....	5 78	6 53	7 03
Ida,.....	5 31	6 06	7 76
Petersburgh, ...	5 37	6 12	7 62
Deerfield,.....	5 42	6 17	7 67
Tecumseh,.....	5 54	6 29	7 79
Clinton, ...	5 59	6 39	7 84
Manchester, ...	5 67	6 42	7 92
Napoleon,.....	5 78	6 53	8 03
Jackson, ...	5 89	6 64	8 14
Adrian,.....	5 54	6 29	6 79
Clayton, ...	5 66	6 41	7 91
Pittsford,.....	5 77	6 52	8 02
Osseo, ...	5 82	6 57	8 07
Hillsdale,.....	5 87	6 62	8 12
Jonesville,.....	5 92	6 67	8 17
Quincy,.....	6 03	6 78	8 28
Coldwater, ...	6 09	6 84	8 34
Bronson, ...	6 20	6 95	8 45
Burr Oak,.....	6 27	7 02	8 52
Sturgis, ...	6 35	7 10	8 60
White Pigeon, ...	6 45	7 20	8 70
Constantine, ...	6 50	7 25	8 75
Three Rivers,.....	6 57	7 32	8 82
Middlebury,.....	6 50	7 25	8 75
Bristol,.....	6 56	7 31	8 81
Elkhart,.....	6 54	7 39	8 89

The Tariff to all Stations on Air Line and to Stations west of Elkhart, will be the same rate per ton, per mile, as to the Stations enumerated in the above table.

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The figures in the table are given as a matter of information to purchasers. This Company will not be responsible for any change that may be made in prices of Plaster at Grand Rapids and Monroe, or rates of freight upon the Detroit and Milwaukee Railroad.

JOHN D. CAMPBELL,
Supt. M. S. & N. I. R. R.

M. S. & N. I. R. R., Toledo, Feb. 26, 1859.

LAPEER COUNTY.

No report.

LENAWEE COUNTY.

No report.

LIVINGSTON COUNTY.

No report.

MACOMB COUNTY.

ROMEO, December 20, 1858.

R. F. JOHNSTONE, Esq., *Secretary Michigan State Agricultural Society:*

DEAR SIR—In compliance with the requirement of law, I submit to you my annual report of the proceedings of the Macomb County Agricultural Society for the year now closing.

Respectfully yours,

JOHN WRIGHT,
Secretary.

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At a meeting of the Executive Committee held at Romeo, the 26th day of January, it was

Resolved, That the Secretary is hereby instructed to advertise in the three county newspapers for proposals for a piece of land of not less than eight acres, suitable for the permanent location of the Society's Fairs, and also for proposals for the use of grounds for holding the Fair of 1858; also,

Resolved, That a committee of three be appointed to examine lands that may be offered for the above named purposes, and report to the Board at its next meeting.

The President appointed Messrs. Nathan Dickinson, Carlos W. Brown and Willard A. Wales said committee.

Resolved, That the Secretary be a committee to frame suitable Rules and Regulations, and draw up a Premium List for the next Fair of the Society.

The Board then adjourned to meet at Brooklyn, on Monday, the 19th day of April next, at one o'clock P. M.

—

Pursuant to adjournment, the Board of Directors met at Brooklyn, 19th April, 1858.

The minutes of previous meeting were read and approved.

The Secretary reported that in compliance with the instructions of last meeting, he had caused advertisements to be inserted in all the county papers requiring proposals for land for the Society's use, and that the only proposal received was one from Messrs. J. E. Davis and Barlow Davis, viz: to donate to the Society a good and sufficient warranty deed of eight acres of land, situate at Brooklyn, for the purpose of holding its annual fairs.

On motion,

Resolved, That at present it is inexpedient to locate the fairs permanently.

On motion,

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Resolved, That a committee of three be appointed to determine the location of the fair for the present year:

Messrs. Harvey Mellen, Willard A. Wales and D. S. Priest were appointed said committee.

The following Rules and Premium List were then adopted:

RULES AND REGULATIONS

For the government of the Ninth Annual Fair of the Macomb County Agricultural Society, to be held at Romeo, on Wednesday, Thursday and Friday, the 6th, 7th and 8th days of October, 1858.

Any person may become a member of the Society on payment of one dollar for the first, and fifty cents for each succeeding year, and subscribing to the constitution. Members with their families, (excepting sons over twenty-one years of age,) are entitled to admission to the Fair Grounds, at all times during the continuance of the Fair.

Single admission tickets may be had at the business office on the Fair Ground.

The Directors will have their head-quarters at the Fair Ground, where they will be ready to wait on all who wish to become members, or enter articles for exhibition, at 9 o'clock A. M., on Wednesday, the first day of the Fair.

No stock or other articles can be entered to compete for premiums until the owner thereof becomes a member of the Society.

Entries of stock or other articles may be made at any time within ten days prior to the Fair, by letter or personal application to the Secretary, at his office in Romeo, but no entry can be made after 5 o'clock P. M., on Wednesday, the first day of the Fair.

Persons entering stallions or blood stock, will be required to furnish a written or printed pedigree of the same.

No animal having been awarded a first premium shall again be allowed to compete in the same class, except for sweepstakes.

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No animal shall be entered for premiums in more than one class, except in the class denominated "foreign" or sweepstakes.

All stock, manufactures or products intended for exhibition, must be on the ground and arranged in their proper places by 8 o'clock A. M., on Thursday, the second day of the Fair.

Manufactured articles, to compete for premiums, must have been manufactured within the year.

Cards will be furnished by the Secretary, at the business office on the ground, for each and every article or animal entered for exhibition, designating the division, class and number of the article or animal; and the owner thereof will place the same upon or near such article or animal for the convenience of the judges. The name of the owner must in no instance be added thereto or otherwise attached.

Individuals will be appointed to receive and arrange articles and animals as presented with their numbers.

Animals or articles not entered and placed in their proper class shall not be entitled to compete for premiums.

All animals brought from other counties shall be entered as *foreign*, and shall not come into competition with animals owned in the county; but animals owned in the county may comepete with said foreign animals, although they may have been entered for competition in the county. When there is no foreign stock to compete with, no premium shall be awarded in this class.

Premiums shall not be awarded in any evident case of fraud, or where the article or animal is not worthy, even though there be no competition.

Premiums on Field Crops, Fat Cattle and Sheep will be awarded by the Executive Committee, at their session at the annual meeting, and every competitor must comply with the following requirements, viz: he shall deliver to the President or Secretary an accurate statement in writ-

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ing, certified to under oath, of the character of the soil and process of preparing it, (including the quantity and quality of manure applied in raising the crop, and the quantity and value of the seed,) or the kind and quantity of food in feeding the animals, as the case may be; also, the nature and cost of labor employed and the total expense and product of crops or the increase and value of animals, with a view of showing accurately the nett resulting profit.

The several Committees of Judges will report themselves to the Executive Committee by 9 o'clock A. M., on Thursday, the second day of the Fair, and immediately enter upon their duties. They shall make their report to the Secretary by 3 o'clock P. M. of the same day. It is of the utmost importance that Committees should be at their posts at the hour of meeting.

The annual address will be delivered by His Excellency Governor Bingham, on the Fair Ground, at 10 o'clock A. M., on Friday, the third day of the Fair.

Immediately after the address, the reports of Judges and awards of premiums will be read.

An auction will then be held, for the sale of such articles or animals on the ground, as the owners may wish to sell.

All fruit offered for exhibition will be considered the property of the Society, unless reserved by the exhibitor.

The annual meeting of the Society, for the election of officers, and for the transaction of such other business as may lawfully come before said meeting, will be held on the second Thursday in December, at 1 o'clock P. M., of which due notice will be given.

—

THE FAIR.

The Ninth Annual Fair of the Macomb County Agricultural Society was held at Romeo, on Wednesday, Thursday and Friday, the 6th, 7th and 8th days of October last.

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The ground selected for the purpose was a field containing five acres in the northwest part of the village. The temporary buildings erected for the occasion were admirably adapted to their uses, and were paid for principally by voluntary contributions from the citizens of Romeo. The weather was perhaps the most unfavorable that has ever fallen to the lot of the Society for holding its Fairs, yet, notwithstanding its extreme inclemency, the attendance was large indeed. The number of entries exceeded that of any former year, and the show (especially of stock) was the finest the county has ever witnessed. It is to be regretted, however, that the receipts were considerably in deficit of the expenditures. This result is undoubtedly owing to the facts that memberships were renewed this year for fifty cents, instead of one dollar, as last year, and the unusually fine show of stock and manufactured articles necessarily demanded an increase in the amount of premiums awarded. No doubt the incessant winds and rains materially reduced the receipts from what they otherwise would have been, yet even with the most auspicious weather it was hardly to be expected they would prove sufficient. It must also be remembered that our Board of Supervisors (unlike those of some of the neighboring coun-counties,) have always voted to the Society—just what the law compelled them—and no more.

On Friday, the third day of the Fair, for the reason above named, it was found necessary to adjourn to the Congregational Church for the purpose of hearing the Annual Address. The Church was crowded to its utmost limits, while many were unable to obtain admission. His Excellency Governor Bingham delivered the Address. It was able, eloquent and eminently practical, and was received with marked attention and with frequent signs of approbation.

After the Address, on motion of C. F. Mallary, Esq., it was unanimously

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Resolved, That the thanks of the Society are hereby tendered to the Governor, and that he be requested to furnish a copy of his Address for publication.

On motion of Linus S. Gilbert, Esq.,

Resolved, That the thanks of the Society are due to the Trustees of the Congregational Church for the use of their building, and also to the Choir for their services on the present occasion.

The Society then adjourned to the Fair Ground, where the reports of the several Committees of Judges were read; after which the Society adjourned to meet at Brooklyn, on Thursday, the ninth day of December next, at one o'clock P. M.

—

The annual meeting of the Directors of the Macomb County Agricultural Society was held at Brooklyn, on Thursday, December 9th.

The premiums on Field Crops were awarded as follows:

On corn, Loren Andrews, 1st premium,.....	$5 00
" Albert Edgett, 2d "	3 00
On rutabagas, Gideon Draper, 1st premium,.....	5 00
" Thomas Payne, 2d "	3 00
On beans, Charles Inman, 1st premium,.....	5 00
On broom corn, Albert Edgett, 1st premium,.....	5 00
On potatoes, Thomas Payne, 1st premium,.....	5 00
On sorghum, Nathan Adams, 1st premium,.....	5 00

On motion of Mr. Smith, it was

Resolved, That the diploma of the Society be awarded to the Rev. J. H. Burnham for a collection of minerals exhibited at the Society's last Fair.

The Treasurer then presented his annual report, which was accepted and adopted.

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TREASURER'S REPORT.

Macomb County Agricultural Society in account with C. W. Weston, Treasurer.

CREDIT.

By amount on hand, Dec. 10, 1857,	$505 91
" from County Treasuer,	135 43
" from new members,	114 00
" from renewal of memberships,	160 00
" for admittance to Fair Grounds,	219 00
" for books sold,	1 50
Total,	$1,135 84

DEBIT.

To amount paid for books,	$ 70 58
" " on Society's orders,	827 94
To balance cash on hand,	237 32
Total,	$1,135 84

Utica, December 9, 1858.

On motion, the Board adjourned *sine die.*

—

The annual meeting of the Macomb County Agricultural Society was held pursuant to notice, at Brooklyn, on Thursday, December 9, at one o'clock P. M.

The Vice President called the meeting to order.

The Treasurer's report was read.

On motion of Ira H. Butterfield, Esq., and by a vote of more than two-thirds of all the members present, the articles of association were amended so as to read as follows:

CONSTITUTION.

ARTICLE FIRST.

The name of this association shall be "the Macomb County Agricultural Society," and its object shall be to promote the improvement of agriculture and its kindred

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arts throughout the county, and shall be auxiliary to the Michigan State Agricultural Society.

ARTICLE SECOND.

Sec. 1. Any person who shall pay into the Treasury of of this Society the sum of one dollar shall be a stockholder therein and entitled to all the privileges and immunities thereof, and may continue a member on the payment of one dollar annually thereafter.

Sec. 2. Members of the Society shall be entitled, with their wives and children under eighteen years of age, to all the privileges of the Society at its fairs, without the payment of any other sum of money.

ARTICLE THIRD.

Sec. 1. The officers of this Society shall be a President, a Vice President, a Secretary, a Treasurer, and seven Directors, who shall manage all the affairs of the Society.

Sec. 2. They shall be elected by ballot by the members of the Society on the second Thursday in December, annually, at one o'clock P. M. The President and Secretary to receive and canvass the votes and to declare who has been elected by receiving a majority of the whole number of votes cast.

Sec. 3. The officers so elected shall come into office on the first day of January next succeeding their election, and shall remain in office one year, or until others are elected to fill their places.

ARTLCLE FOURTH.

Sec. 1. The duties of the President, Vice President and Secretary shall be such as usually appertain to their respective offices, and such as may be prescribed by the Board of Managers, as hereinafter provided.

Sec. 2. The Treasurer shall file with the President a bond, with two good and sufficient sureties, in double the amount to come into his hands, as directed by the Board of Managers. He shall keep a correct account of all moneys belonging to the Society that may come into his

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hands, and shall pay out the same only on orders signed by the President and Secretary; he shall also render a full account of the same annually, to be published with the proceedings of the Society.

Sec. 3. The Board of Managers shall direct the money appropriations of the Society, and shall have the entire control of its property. They shall hold an Annual Fair or Exhibition and shall distribute premiums for the best and most meritorious animals or articles exhibited at such Fair or Exhibition, and shall make all necessary rules and regulations for the government of the same. They shall also elect two of their number who, with the Secretary, shall constitute a Board of Auditors to inspect the Treasurer's accounts and to examine and adjust all claims against the Society.

ARTICLE FIFTH.

The Secretary shall receive a salary not exceeding thirty dollars per annum for his services, and no other officer of the Society shall receive any salary or compensation whatever.

ARTICLE SIXTH.

Upon all premiums amounting to one dollar or over, a deduction of ten per cent. shall be made and retained for the use and benefit of the Society.

ARTICLE SEVENTH.

This constitution may be amended or altered by a vote of two-thirds of the stockholders present at any annual meeting of the Society.

On motion, the Society proceeded to the election of officers for the year 1859, and the following gentlemen were duly elected.

President—George W. Phillips, Armada.
Vice President—P. M. Bently, Macomb.
Secretary—John Wright, Romeo.
Treasurer—Charles W. Weston, Utica

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Directors—Jesse Bishop, Romeo; Daniel Flagler, Richmond; Loren Andrus, Washington; Stephen H. Davis, Ray; Thomas M. Crocker, New Baltimore; Ira H. Butterfield, Utica; William Canfield, Mt. Clemens.

On motion, the Society adjourned.

JOHN WRIGHT,
Secretary.

MACKINAC COUNTY.

No report.

MARQUETTE COUNTY.

No report.

MASON COUNTY.

No report.

MIDLAND COUNTY.

No report.

MONROE COUNTY.

No report.

MONTCALM COUNTY.

No report.

NEWAYGO COUNTY.

No report.

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OAKLAND COUNTY.

DEAR SIR—Enclosed I send you the Annual Report of the Oakland County Agricultural Society for the year 1858.

J. R. BOWMAN,
Secretary.

To R. F. JOHNSTONE, Esq.,
Secretary Michigan State Agr'l Society.

The annual meeting of the Oakland County Agricultural Society for the election of officers, was held at the Court House, in the village of Pontiac, on the 12th day of January, A. D. 1858.

The President of the Society being absent, Hon Stephen Reeves, A. S. Brooks, and R. E. Trowbridge, Vice Presidents of the Society, presided at said meeting.

It was then, on motion,

Resolved, That the we now proceed to an informal ballot for President of said Society.

Resolved, That Messrs. H. W. Lord and A. C. Baldwin be appointed tellers.

The meeting proceeded to ballot for President with the following result:

John Thomas,	38	votes.
R. E. Trowbridge,	30	"
C. W. Green,	13	"
N. W. Clark,	19	"
Scattering,	1	"
	101	

It was then, on motion,

Resolved, That we now proceed to a formal ballot for President, which resulted as follows:

R. E. Trowbridge,	60	votes.
John Thomas,	55	"
N. W. Clark,	2	"
	117	

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Resolved, That the members of the Society from each Representative District present a member for Vice President from their District.

The following were then elected Vice Presidents for said Society viva voce, viz:

1st District—Lysander Woodward;

2d District—Stephen Reeves;

3d District—Frederick Bradley;

4th District—A. S. Brooks;

5th District—Joseph Coates.

On motion of J. D. Yerkes,

Resolved, That the Second Article of the Constitution of this Society be amended so that the same shall read as follows:

ART. 2. The officers of this Society shall be a President, one Vice President for each Representative District in the County, a Treasurer, a Recording Secretary, a Corresponding Secretary, and an Executive Committee of ten members to be chosen for that purpose at the annual meeting of this Society, one-half of the Executive Committee to hold for two years and the remainder for one year, and at the next annual meeting, (which shall hereafter be held on the second Tuesday of January in each year,) and annually thereafter, five members of the Executive Committee shall be elected to hold for two years.

The above amendment to the Constitution was adopted by a vote of two-thirds of the members present.

On motion,

Resolved, That we now proceed to elect viva voce five members of the Executive Committee to serve two years.

The following persons were then elected:

Chauncey W. Green, Farmington;

Marshal S. Hawley, Avon;

A. G. Benedict, West Bloomfield;

Augustus C. Baldwin, Pontiac;

James Bayley, Troy.

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On motion,

Resolved, That we now proceed to elect viva voce five members of the Executive Committee to serve one year.

The following persons were then elected, viz:

George H. Satterlee, Bloomfield:

William Whitfield, Waterford;

Joseph D. Yerkes, Novi;

Nelson W. Clark, Independence;

Moses Wisner, Pontiac.

Joseph R. Bowman was then elected Recording Secretary, viva voce.

Charles C. Waldo was elected Corresponding Secretary, viva voce.

Harry C. Andrews was elected Treasurer, viva voce.

The Treasurer of the Society made the following report:

PONTIAC, Jan. 12, 1858.

To the President of the Oakland County Agr'l Society:

SIR—I herewith enclose the regular annual report of the Treasurer of the Oakland County Agricultural Society, showing the financial condition of the Society to this date.

Respectfully,

C. A. HOWARD,

Treasurer Oakland Co. Agr'l Society.

—

CHARLES A. HOWARD, *Treasurer*, DR.

1857.		
Mar. 3.	To amount received from S. E. Beach,	$ 47 67
	To amount of bogus coin,.....	3 50
Oct.	To am't rec'd for membership and admission tickets,.....	1,017 00
	To am't rec'd for hay sold,.....	9 00
	" " from subscriptions collected by J. R. Bowman, ...	85 36
	To am't due Treasurer,.....	15 52
	Total,.....	$1,178 05

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CREDIT.

By amt. paid order to		S. E. Beach,	$ 81 00
"	"	Lyman Marsh,	6 00
"	"	C. W. Green,	8 00
"	"	" verbal order,	1 00
"	"	M. E. N. Howell,	4 00
"	"	J. R. Pearson,	3 00
"	"	John Allen,	6 00
"	"	(verbal,) John Thomas,	75
"	"	H. Wynter,	7 00
"	"	Wm. Thorpe,	15 25
"	"	George Thorpe,	14 25
"	"	C. C. Goodwin,	2 00
"	"	Wm. Hale, (2 orders,)	12 00
"	"	H. S. Rinehart,	4 50
"	"	Arthur Davis,	9 00
"	"	J. R. Bowman,	75 00
"	"	W. C. Sherwood,	1 00
"	"	F. O. Jones,	3 25
"	"	McConnell & Baum,	1 94
"	"	D. I. Pratt,	21 85
"	"	N. Peacock,	6 00
"	"	O. A. Stevens,	15 00
"	"	Z. B. Knight,	17 00
"	"	N. T. Thurber & Co.,	11 48
"	"	Ed. Parks,	2 75
"	"	Benj. Gray.,	2 13
"	"	Patrick & Hearen, print.,	10 00
"	"	order to S. E. Beach,	19 00
"	"	for hand and stamp seal,	7 90
"	"	premiums from March 3, 1857, to date,	621 50
By counterfeit coin in hand,			3 50
By cash in hands of J. A. Weeks,			185 00
Total,			$1,178 05

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On motion,

Resolved, That the report of the Treasurer be accepted and entered upon record.

Adjourned.

R. E. TROWBRIDGE,
President.

J. R. BOWMAN, *Rec. Sec'y.*

—

At a meeting of the Executive Committee of the Oakland County Agricultural Society, held at the Court House in Pontiac, upon the 12th day of January, A. D. 1858, present, R. E. Trowbridge, President; James Bailey, A. G. Benedict, Chauncey W. Green, Joseph D. Yerkes, William Whitfield, Marshal S. Hawley, and Nelson W. Clark, Executive Committee; Joseph R. Bowman, Recording Secretary.

Resolved, That Messrs. Wisner, Baldwin and Bowman be a Committee to settle with the Treasurer.

Resolved, That an adjourned meeting of the Executive Committee be held at the office of the Recording Secretary on the 23d day of February, A. D. 1858, at 10 o'clock in the forenoon.

Adjourned.

J. R. BOWMAN, *Rec. Sec.*

—

At an adjourned meeting of the Executive Committee of the Oakland County Agricultural Society, held at the office of the Recording Secretary, on the 23d day of February, A. D. 1858, present, Rowland E. Trowbridge, President; J. R. Bowman, Recording Secretary; Chauncey W. Green, A. G. Benedict, George H. Satterlee, William Whitfield, Moses Wisner, James Bailey, Augustus C. Baldwin, Joseph D. Yerkes and Marshal S. Hawley, Executive Committee.

Resolved, That a Committee of three be appointed by

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the Chair to examine the Premium List and report to the Board.

Messrs. Green, Hawley and Wisner were appointed said Committee.

Resolved, That a Committee of three be appointed to examine a List of premiums on Field Crops.

Messrs. Satterlee, Whitfield and Benedict were appointed said Committee.

Resolved, That a Committee of three be appointed on Rules and Regulations.

Messrs. Bailey, Baldwin and Yerkes were appointed said Committee.

The Committee appointed at the last meeting to settle with the Treasurer, made a report (verbal) which was accepted, and the Committee discharged.

Resolved, That the President, Recording Secretary and new Treasurer be a Committee to settle with C. A. Howard, late Treasurer, and that they be and are hereby instructed to allow him forty dollars for his salary as such Treasurer.

Resolved, That Jacob Hiller be and is hereby allowed $1 for a premium of woolen stockings, (No. 77,) lost or stolen while on exhibition at the last Fair.

Resolved, That the Treasurer of this Society be allowed the sum of forty dollars per annum, to be in full for his services, and that he give a bond to the President in trust for the Executive Committee of this Society, to be approved by the Recording Secretary thereof, in the penal sum of two thousand dollars, for the faithful performance of the duties of his office, and that said bond be filed with the Recording Secretary.

The Committee on Field Crops made a report which was accepted and the Committee discharged.

The Committee on Premium List made a report, which was accepted and the Committee discharged.

On motion, it was

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Resolved, That the Premium List be taken up and examined by Classes.

Adjourned until to-morrow morning at 9 o'clock.

—

February 24, 1858.

Executive Committee met pursuant to adjournment.

President, Recording Secretary and members of Executive Committee all present.

The Premium List was then taken up by Classes, and after being amended, was adopted.

The Committee on Rules and Regulations made a report which was accepted, the Committee discharged, and the report laid on the table.

Resolved, That all Draught Horses and Working Oxen entered for exhibition, shall be tested by draft on the ground, and that no Horses or Oxen not so tested shall be entitled to a premium.

Resolved, That all Horses entered in the Class of Trotting Stock, shall trot by time, and not side by side in competition with each other.

Resolved, That all Horses competing in the Class of Trotting Stock, be not allowed to compete in other Classes.

Resolved, That ladies who intend competing for premiums in Equestrianism, report themselves as early as 12 o'clock M. on the first day of the Fair to the Executive Committee.

On motion of M. Wisner,

Resolved, That all entries be made by 10 o'clock P. M. of the first day of the Fair.

On motion,

Resolved, That we now proceed to elect the Viewing Committees.

The Rules and Regulations were then, on motion, taken from the table and adopted.

Resolved, That all members of Viewing Committees, who

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discharge their duties on the Fair Ground, be furnished their dinners at the expense of the Society, on the two last days of the Fair.

Resolved, That John P. Le Roy, Esq., be appointed a Special Committee to circulate subscriptions for fitting up the grounds.

Resolved, That the next Annual Fair be held at Pontiac, on the 6th, 7th and 8th days of October next, ensuing.

Resolved, That a Business Committee of five be appointed to make all the necessary arrangements for the next Fair.

Messrs. Baldwin, Clark, Benedict, Satterlee and Bowman were appointed said Committee.

Resolved, That the above Committee procure some suitable person to deliver the Address at the next Fair.

On motion of M. Wisner,

Resolved, That a Committee of three be appointed by the Chair to purchase the lot north of the Fair Ground now owned by John Chamberlin.

Messrs. Wisner, Bowman and Benedict were appointed said Committee.

On motion of C. W. Green,

Resolved, That the Business Committee build a shed at the expense of the Society, containing twenty-five stalls, for the use of the Fair, to be rented to persons exhibiting mares and colts, and that they also be instructed to set posts around the exhibition ring for horses, one at each tree for the purpose of stretching a rope around the same, and that they also furnish a set of flags with a description of each Class of Horses inscribed thereon.

Resolved, That a Committee of three gentlemen and five ladies (the gentlemen to be appointed by the Chair and the ladies by the Business Committee,) be appointed to take the supervision of the arrangements of Floral Hall for the next annual exhibition.

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Messrs. Wisner, Baldwin and Bowman were appointed by the Chair.

On motion of C. W. Green,

Resolved, That the Business Committee report previous to the next Fair, the number of persons each public house in Pontiac will accommodate, the price of board per day and the price per meal.

Resolved, That the Business Committee get up a programme of the Exhibition and insert in Premium List.

On motion of M. Wisner,

Resolved, That a Committee of three be appointed by the Chair to prepare a Constitution and By-Laws for this Society, to be presented at the next annual meeting, for the purpose of organizing under the statute.

Messrs. Wisner, Clark and Bowman were appointed said Committee.

On motion of Mr. Clark,

Resolved, That no carriage or wagon shall be admitted to the Fair Ground without paying twenty-five cents for single and fifty cents for double carriages after the first day, and that no teams shall be tied up and left on the grounds to be fed unless they are entered for competition; but teams can be admitted with carriages for the purpose of exhibiting them before the Vihwing Committees, without charge.

The meeting then adjourned.

R. E. TROWBRIDGE,
President.

J. R. BOWMAN, *Rec. Sec'y.*

—

At a meeting of the Executive Committee of the Oakland County Agricultural Society, held at the Fair Ground, on Wednesday, the 6th day of October, A. D. 1858, present, R. E. Trowbridge, President; J. R. Bowman, Recording Secretary; Moses Wisner, Chauncey W. Green, Jos.

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D. Yerkes, William Whitfield, Nelson W. Clark, James Bailey, A. G. Benedict, A. C. Baldwin, Marshal S. Hawley, Executive Committee.

The following persons were appointed to superintend the several departments during the Fair, viz:

Horses—Messrs. Green and Wisner.

Cattle—Joseph D. Yerkes.

Sheep and Swine—Wm. Whitfield.

Farm Implements—Nelson W. Clark.

Grain, &c.—James Bailey.

Fruit—A. G. Benedict.

Floral Hall—A. C. Baldwin.

Domestic Manufactures—M. S. Hawley.

Resolved, That the President be the General Superintendent of the Grounds.

Adjourned to meet to-morrow morning at 11 o'clock, to fill vacancies in the Viewing Committees.

R. E. TROWBRIDGE,
President.

J. R. BOWMAN, *Rec. Sec'y.*

—

October 7, 1858.

Executive Committee met; present, R. E. Trowbridge, President; J. R. Bowman, Recording Secretary; A. C. Baldwin, J. D. Yerkes, M. S. Hawley, C. W. Green, Wm. Whitfield, and A. G. Baldwin, Executive Committee.

Resolved, That the Entry Clerks be directed to allow all entries to be made until 11 o'clock this forenoon.

Resolved, That M. E. Crofoot be appointed Marshal with power to appoint his Assistants.

Resolved, That the lower gate be used for the entry of teams, and the second gate for egress.

The hour of 11 o'clock having arrived, the Executive Committee proceeded to fill the Viewing Committees, as follows:

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Division A, Class 1, Short Horns—William Hunter, Lysander Woodward, John Derrick.

Class 2, Devons; Class 3, Herefords; Class 4, Ayrshires, —John H. Button, Jedediah Durkee, Birdseye Dewey.

Class 5, Cross of Blood Cattle—George Miller, Rial Irish, T. W. Barber.

Class 6, Grade and Native—Walter Whitfield, John R. Martin, Gideon Scott.

Division B, Class 1, Blood Horses—John Henderson, Henry W. Lord, Elias S. Woodman.

Sweepstakes—Same Committee.

Class 2, Horses for all work—Charles R. Carpenter, Aaron S. Palmer, Harvey C. Judd.

Class 3, Draught Horses—John Thomas, Myron G. Cobb, Seeley Harger.

Class 4, Trotting Horses—T. A. Armstrong, Sanford L. Murray, Josephus Smith.

Class 5, Farm Teams—Henry Birge, Wm. P. Draper, Joseph C. Powell.

Class 6, Carriage and Single Horses—John Shear, L. C. Harger, J. V. Lambertson.

Division C, Class 1, Spanish Merino Sheep—John G. Owen, John W. Leonard, Alfred Phelps.

Class 2, French Merino Sheep—F. A. Williams, Alanson Pearsall, Abraham Lapham.

Class 3, Cross of Blood—William Satterlee, T. W. Barber, Eddy Morrison.

Class 4, Leicester; Class 5, Southdowns; Class 6, Fat Sheep—Charles Boughner, H. W. Horton, J. A. Durkee.

Class 7, Swine—B. B. Redfield, Joel Benedict, M. J. James.

Class 8, Poultry—Byron G. Stout, Charles Baldwin.

Division D, Farm Implements—Horatio Wright, Wm. L. Cramer, John Sprague.

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Class 3, Boots and Shoes—George R. Hixson, Hezekiah Short, D. Kyle.

Class 4, Domestic Manufactures—Francis Colman, Mrs. F. Colman, Mrs. Hammond and Miss Voorhies.

Division E, Class 1, Painting, &c.—John P. Le Roy, Mrs. Z. B. Knight and Mrs. A. A. Lull.

Class 2, Needle, Shell, Wax Work, &c.—Francis Colman, Mrs. P. Hogan, Mrs. O. F. North and Mrs. Fisher.

Class 3, Flowers—A. B. Cudworth, Mrs. C. W. Green, and Mrs. A. C. Baldwin.

Division F, Class 1—Butter Cheese, &c.—Stephen V. R. Trowbridge, Mrs. Stewart aud Mrs. M. L. Brooks.

Class 2, Fruit—O. M. Brunson, S. B. Noble, William Beatty.

Class 3, Vegetables—Israel P. Leet, Albert Terry, Luther Lapham.

Division G, Class 1, Grain, &c.—John L. Andrews, A. A. Walton, Truman Decker.

Division H, Class 1, Female Equestrianism—M. E. Crofoot, C. A. Greene, Henry W. Lord.

Class 2, Miscellaneous—Chas. Baldwin, D. J. Pratt, Harrison Voorhies.

Class 3, Essays—A. C. Baldwin, Moses Wisner and R. E. Trowbridge.

Sweepstakes, Bulls—James Bailey, Marshal S. Hawley, Wm. Satterlee.

Resolved, That all vacancies in above committees be filled by the remaining members of the Committee and the Executive Committee in charge of the department.

Resolved, That teams entered in the Class of Farm Teams, may compete in the Class of Draught Horses at the option of the person entering.

The Committee Books having been prepared by the Secretary, were delievered to the several Viewing Commit-

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tees, who forthwith proceeded to the examination of stock and other articles on exhibition.

This afternoon there was a grand cavalcade of all the horses entered for exhibition, on the track around the Fair Ground.

—

Friday, October 9, 1858.

At ten o'clock in the forenoon the Trotting Stock was exhibited on the long track around the Fair Ground, after which trials of speed were made under the direction of the Committee.

At twelve o'clock at noon the Address was delivered by the Hon. Charles E. Stuart, from the stand, and was received with much applause.

It was resolved that the thanks of the Society be tendered to the Hon. Charles E. Stuart for his Address delivered before this Society.

The Address being extempore, a copy for publication could not be procured as was the desire unanimously expressed by those who had the pleasure of hearing it.

Exhibitions of Female Equestrianism were made under the direction of the Judges.

The Clarkson Brass Band, under the leadership of Wm. Hirst, were present and added much to the festivities of the day by their performances on the ground.

The Pontiac Fire and Hose Company were out in full dress and made a very fine appearance.

At three o'clock P. M., the report of the Judges were read from the stand by the Recording Secretary.

The whole number of entries made were 1,428, an increase over last year of 235, classified as follows:

Cattle,	173
Horses,	441
Sheep,	79
Swine,	25

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Poultry,	26
Farm Implements,	46
Clothing,	4
Domestic manufactures,	98
Painting,	28
Needle work, &c.,	56
Flowers,	24
Butter, cheese, &c.,	132
Fruit,	71
Vegetables,	78
Grain,	97
Field Crops,	6
Female Equestrianism,	2
Miscellaneous,	42
Total,	1428

Ten hundred and eighty-one dollars and twenty-seven cents were received for membership and admission tickets, an increase over last year of $64 27.

The amount of Premiums awarded to be paid in cash is $927 50, an increase over last year of $51 50.

We are indebted to Mr. S. B. Noble, the *Pontiac Jacksonian* and the *Pontiac Gazette* for the following notices of the Fair:

For the Jacksonian.

OAKLAND COUNTY FAIR.

The Oakland County Agricultural Society held their Tenth Annual Fair, on Wednesday, Thursday and Friday, of last week, in this village, on the ground of the Society, which, the present season, has been enlarged, and now embraces about ten acres of land, beautifully located, and admirably fitted up for an exhibition worthy of Old Oakland. According to the best information we have obtained, Oakland is ahead of any other county in the State, for the extent of its ground and permanency of its fixtures, and sec-

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ond to none in the superiority of its stock, and quality and variety of its products.

The Fair just held, has been one of its best, notwithstanding the weather was most unpropitious—having cold, raw winds, with some rain and snow. The number of entries were in advance of any former year. The receipts were also larger than any previous year. These facts show that the farmers of Oakland intend to sustain the Society, not only with their presence, but with substantial aid. All the officers of the Society have been unremitting in their efforts to fit up the grounds, and make them just what they are—convenient and pleasant, and their presence on the three days of the Fair, aided by an efficient police, all passed off quietly, without anything of moment to mar the good feelings of all interested. On Friday, the last day, Pontiac Fire Company No. 1, in uniform, with their engine, after having proceeded to the depot to escort the Hon. C. E. Stuart to the Fair Ground, promenaded around the grounds, much to the satisfaction of many. At about 11 o'clock, Mr. Stuart addressed, in his usual interesting manner, a large audience of attentive hearers.

The aggregate number of entries is fourteen hundred and twenty-nine in the several departments, as follows: Horses, 432; Cattle, 176; Sheep, 76; Swine, 25: Poultry, 26; Farm Implements, 46; Clothing, 4; Domestic Manufactures, 98; Paintings, &c., 28; Needle, Shell and Wax Work, 56; Flowers, 24; Butter, 36; Cheese, 12; Bread, Cakes and Pies, 59; Fruit, 71; Vegetables, 88; Grain, Flour, and Seeds, 87; Field Crops, 16; Female Equestrianism, 2; Sugar, Honey and Wines, 25; Miscellaneous, 42.

Floral Hall was fitted up in good style, with as great a variety of flowers as the lateness of the season permitted. The ladies of our village deserve credit for the taste displayed and time spent to make Floral Hall what it was—the centre of attraction. There were many very choice exotics, as well as indigenous flowers. Some superb spe-

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cimens of flowers were exhibited by Mrs. Thomas, of Oxford. This is just as it should be. Our amateur cultivators of flowers and fruit in all the towns, can render good service to our exhibitors, by bringing to our fairs the products of their gardens and fruits yards.

The Fine Arts department was richly stored with needle, shell and fancy work, in great variety of exquisite workmanship, highly creditable to the fair hands that produced them.

Domestic manufactures were well represented by a rich display of carpeting, coverlets, quilts, counterpanes, and smaller articles. In the fruit department, was a fine display of apples of choice varieties, a few fine pears and peaches, and a large variety of fine grapes, both native and foreign. The quinces are seldom equalled for size and beauty. Melons and citrons were in abundance.

The shelves of the dairy department fairly groaned under its load of large tubs and jars of butter, with Oakland's best Hamburg cheese. Bread of all kinds—some of the brown loaves throws our grandmothers entirely in the shade. Cakes in endless variety, and pies of apple, mince, pumpkin, custard, and cream sufficient to satisfy the greatest epicure and feed a small army; also, a large lot of superior honey, and the sparkling Currant, Isabella and Catawba wines.

Among the agricultural implements were cross cut sawing machines, now getting to be a necessary institution. Reapers and mowers, plows, cider mills, corn-shellers, scrapers, cultivators, seed-drills, and many smaller articles, among which was one of Luce's corn-huskers, which attracted much attention. It appeared to do its work well, and no doubt will be very acceptable to the boys.

The vegetable department was well stocked with an excellent lot of the various vegetables, of good growth, among which we noticed some very fine sweet potatoes.

In the poultry department were found a great variety

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of fowls, some of which were fine birds. The swineish gentry were not numerous, but there were some good ones. Of sheep, no county excels Oakland for fine specimens of French, and Spanish, South Downs, and Leicestershire, and their crosses.

Among the cattle were Short Horns and Devons, with their crosses, grades and natives, milkers, working oxen, and fat cattle, well bred and in fine order.

The horses were represented by blood horses, horses of all work, draught, trotters, breeders, carriage and single horses. Oakland county can show superior specimens of horses of the best stock. This was fully tested by the several trials of speed upon the track within the enclosure, which was very attractive to the mass upon the ground. Everybody likes a good horse, and "Young America" must have a fast one, and such there were exhibited.

The scene was enlivened by the trial of the female equestrians, who gracefully rode their spirited horses around the track to the gratification of the numerous vistors.

The grand cavalcade of all the horses on exhibition, was a grand and imposing spectacle, and was witnessed with pleasure.

The Fair, as a whole, has been a good one. Such gatherings have a tendency to keep up that social intercourse and good feeling, that should always characterize all classes of our citizens. S. B. NOBLE.

—

From the Pontiac Jacksonian.

OUR COUNTY FAIR.

This Fair was not only the jubilee, but the perfect triumph of the farmers of Oakland county. Nine years ago the Society held its first Fair upon the village lots near the Hodges House, and there was plenty of room to accommodate exhibitors, visitors and articles. It has gone on, increasing in size, interest and utility, until the present

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year, when it required the Society's lot containing nine acres, to accommodate and satisfy the present wants of the people of the county. There was no room to spare, and if a few more acres were added, (and the prospect now is that the grounds will be extended easterly to the Lapeer road,) the people will be better cared for. The Executive Committee had caused about forty stalls for horses and cattle to be erected, new and suitable pens to be constructed, the new lands to be thoroughly drained, and everything arranged that nothing might mar the pleasures of the farmers and mechanics in the county, in the exhibiting of their various products.

The tent of the State Fair had been procured, and the ladies of our village, with zeal and taste, had beautifully decorated it, and made it a fit place for the display of paintings, embroidery, flowers, &c., &c.

The weather the first day was cold and lowery, but the entries exceeded those on any other occasion. The show of stock was unsurpassed, and every available stall and spot was occupied. We heard it frequently remarked that a better display was never made in the State. There were the fine cattle of the Messrs. Brooks, and J. D. Yerkes, of Novi, who have heretofore borne off so many premiums at our State and County Fairs. A. Cloyes, Esq., of White Lake, entered for competition one of the finest looking yoke of cattle we ever saw. The Messrs. Whitfield, of Waterford, had their pens of Southdowns, and T. W. Barbour and J. D. Yerkes, theirs of Spanish Sheep. The number of excellent horses was unusually large, but to make selections as to the best, was a matter of great labor with the judges, and we shall give no opinion. One two year old stallion, of the Hamiltonian and Eclipse stock, owned by David Boyer, of Rochester, attracted much notice, and good judges said, from his manner and build, he would, at maturity, be a fast trotter. G. W. Burrows,

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also of Rochester, had a three year old Black Hawk colt that was much admired.

C. W. Green, of Farmington, had some of his excellent horses and cattle on the ground.

Among so much that was excellent, it is too much of a task to make a selection. We omit to mention the numerous horses of this village, because they are well known, and gained many plaudits for their carriage and speed. The first night, the tent blew down, and disarranged all the plans for a display of the fine arts. Many fine specimens were removed by their owners, but the balance was quickly and carefully removed to one of the buildings, and everything passed off as though nothing had happened.

The lateness of the season prevented as rich a display of flowers as usual, but this department was not neglected. The receipts of the Society, though not as large as they ought to have been, show that the people keep up an interest in this institution. Next year it will become necessary either to enlarge the present buildings, or erect new and more commodious ones. We shall hereafter recur to this subject.

From the Pontiac Gazette.

THE COUNTY FAIR.

Our time and limits this week prevent our giving a very extended notice of the Oakland Fair, now in session in Pontiac, but shall set apart a column in our next issue for that purpose.

The Fair opened propitiously on Wednesday morning. The arrangements of the Committee were complete—stables for horses, pens for sheep, swine, &c.—the Halls in which to exhibit the thousand and one things in the mechanical, industrial and artistic world, and also of the vegetable and floral departments, were substantially and tastefully placed in order.

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The clerks in the entry office were busy all day in attending to their several departments. The display of stock was very fine, and the movements of horses on the "course" were every way creditable to the "fast nags" of which the county is justly proud. Floral Hall was appropriately decorated and arranged by the young ladies of Pontiac. Agricultural implements, wagons, cutters, machines, &c., dotted the grounds, and the state of the Fair at the close of the first day was all its friends could desire.

The second day opened badly. A severe storm occurred during the night previous, leveling Floral Hall to the ground—and jumbling every thing into admirable confusion, squally winds and frequent showers of rain and snow prevailed, yet notwithstanding all these drawbacks, an immense number of people thronged the grounds—and a large number of new entries were made. The committees commenced their work in the P. M.

This morning a beautiful sun and a fair sky betokened a propitious day, but the raw nor'wester overmastered the warm southern breeze and brought on a snow storm.

The programme of to-day has been the firemen's parade, in which Mr. Hirst's excellent brass band of Clarkson, took part. The trial of trotting horses, female equestrianism, the able and interesting address of Hon. Chas. E. Stuart, reading of the list of premiums awarded, and many other interesting features which time forbids our mentioning now. We shall notice more particularly next week.

An interesting incident of the Fair was a friendly and social chat between the following political worthies: Moses Wisner, Charley Stuart, D. C. Jacokes, and Governor Bingham.

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At a meeting of the Executive Committee of the Oakland County Agricultural Society, held at the office of the Secretary, on the 14th day of October, A. D. 1858, present,

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R. E. Trowbridge, President; A. C. Baldwin, A. G. Benedict, Moses Wisner, Wm. Whitfield, Chauncey W. Green, Executive Committee; Joseph R. Bowman, Recording Secretary.

The following accounts were then allowed, viz:

78.	A. G. Benedict, for spruce, posts, &c.,	$9 00
79.	H. S. Rinehart, 3 days as police,	3 00
80.	G. P. Hungerford, marshal and use of horse,	5 00
81.	C. W. Green, for paid night watch,	4 00
82.	G. W. Burrows, for 3 days, police,	3 00
83.	T. Shuttuck, 2 loads straw,	3 00
84.	A. S. Brooks, for paid night watch,	3 00
85.	E. Perkins, 3 days, police,	3 00
86.	Selah Walker, 2 days, police,	2 00
87.	John Daines, for drains tiles,	19 25
88.	A. S. Smith, draying,	10 14
89.	Alvin Toms, for lumber,	103 77
90.	J. Gleason & Co., printing,	63 50
91.	A. C. Baldwin, posts, &c.,	3 69
92.	Ephraim Earles, 3 days, police,	3 00
92.	Danforth Petty, " "	3 00
93.	Wm. Luifear, ditching,	17 00
94.	D. Hubbell, carpenter work,	33 75
95.	Jas. Wallace, 3 days, police,	3 00
96.	David J. Pratt, carpenter work,	50 00
97.	T. O. Leary, " "	4 87
98.	Thomas Smith, 3 days, police,	3 00
99.	George Washburn, police,	4 75
100.	Rufus Hunter, paid night watch,	2 00
101.	E. M. Pearsall, 2 days, police,	2 00
102.	J. R. Pearsall, 3½ days, police and work,	3 50
103.	James Bailey, saw dust,	4 00
104.	Thomas Turk, lumber,	14 90
105.	R. B. Morris & Bro., nails and door hangings,	34 98
106.	A. S. Mathews, entry clerk and police,	6 00
107.	Wm. Thorpe, 3 days work at Fair,	3 00

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108. Hugh Ferguson, 1 days work at Fair,..... $1 00
109. M. F. Elmore, entry clerk,,..... 2 00
110 & 111. Geo. Thorpe, for work on Fair Ground,. 60 75
112. Thos. Laindin, 2 days work, ... 2 00
113. John Linfear, 1 night, police,..... 1 00
114. John Allen, police and night watch,..... 6 00
115. John Brydo, " " " 6 00
116. Jesse Frink, " " " 6 50

Adjourned.

R. E. TROWBRIDGE,
President.

J. R. BOWMAN, *Rec. Sec'y.*

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At a meeting of the Executive Committee of the Oakland County Agricultural Society, held at the office of the Recording Secretary, on Monday, January 10, 1859, present, Moses Wisner, A. C. Baldwin, Chauncey W. Green, James Bailey, Wm. Whitfield, J. D. Yerkes, Geo. H. Satterlee, A. G. Benedict, M. S. Hawley, Executive Committee; Joseph R. Bowman, Recording Secretary.

The President being absent, C. W. Green was appinted President *pro tem.*.

Mr. Wisner having donated to the Society all the premiums awarded to him, now due on the books of the Society, it was

Resolved, That the thanks of the Society be tendered to Mr. Wisner for the donation just made.

Resolved, That the sum of one dollar be allowed to Mrs. Ann Webster for decanter broken and wine lost at the late Fair.

Resolved, That the sum of three dollars be allowed to Joseph Coates for best ¼ acre of rutabagas.

The following premiums were awarded on Essays, viz:

Best essay on Field Crops, S. B. Noble,..... $5 00
" " Root Crops, " 5 00

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Best essay on Domestic Economy, Mrs. Adalina Coates, ... $5 00

The following discretionary premiums were then awarded, viz:

1 pair Honolulu ducks, H. B. Arnold,	$0 50
1 cross cut sawing machine, M. Smith,	2 00
1 cider mill and corn sheller, combined, M. Smith,	1 00
1 revolving road scraper, A. J. Potter,	1 00
1 moss and leaf picture, Mrs. Caskey,	1 00
6 pastelle paintings or colored crayons, Miss M. Gustin,	1 00
1 child's dress, Mrs. Chase & Arnold,	1 00
Best seedling grapes, Dan Kimball,	50
Lot of cranberries, Mrs. B. B. Redfield,	1 00
Dish preserved tomatoes, Mrs. C. W. Green,	1 00
1 case dental work, J. A. Harris,	2 00
4 deer skins, tanned, A. Moon,	1 00
1 elk " " "	1 00
2 casements window sash, F. A. Oliver,	1 00
1 set window blinds, "	1 00
1 corn basket, M. Brooks,	50
1 flour barrel, W. H. Nillis,	50
7 horse shoes, J. D. Gillett,	50
3 reams wrapping paper, made at Rochester, Oakland county, Newberry & Co.,	2 00

Adjourned until to-morrow morning at 9 o'clock.

January 11, 1859.

Roll called, Executive Committee all present. The following preamble and resolution were presented and adopted:

Whereas, It is the duty of every farmer and mechanic who takes an agricultural or mechanical paper, to patronize the paper published in his own State; therefore,

Resolved, That this Board recommend the Michigan Far-

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mer as every way worthy the patronage of the farmers and mechanics of this county and State.

Allowed C. A. Howard, $8 32 for stationery.

Adjourned.

J. R. BOWMAN,
Recording Secretary.

OTTAWA COUNTY.

R. F. JOHNSTONE, ESQ., *Sec'y Mich. State Ag'l Society:*

DEAR SIR—I herewith send you a statement of the transactions of the Ottawa County Agricultural Society. The Third Annual Fair was held September 22d and 23d, 1858, at the Society's Fair Ground near the village of Lamont. The attendance on both days was large. On the last day there was present the largest assemblage every seen in the county. Every town in the county was represented among the members of the Society, and all interested in the agriculture of our county appeared to be alive to the benefits to be derived from a well managed agricultural society.

The Society has within the past year purchased a piece of ground for a show ground, at the above named place. It is enclosed with a good fence eight feet high. Temporary buildings have been erected, and a good driving track one-fifth of a mile, graded.

The show of stock was large for so new a county, (more than double the number shown the previous year,) and of a good quality. Some fine specimens of Devons were on the ground.

Of fruits, although it was not a "bearing year," the exhibition was very fine. The show of apples, pears, peaches, plums and grapes, was excellent.

Of dairy products, we have never seen a finer exhibition. In short it is useless to particularize where all were good and all were pleased. The Third Annual Fair of our Society was a decided success.

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On the 23d, at 2 o'clock P. M., an Address was delivered by the Hon. M. L. Hopkins.

The thanks of the Society was voted the speaker, and a copy of the Address solicited for publication; after which the following officers were elected for the ensuing year.

President—A. B. Sumner.

Vice President—Simeon Hazelton, Jr.

Secretary—Myron Harris.

Treasurer—Miner Hedges.

Executive Committee—Timothy Eastman, Henry D. Post, Charles Alford, Wm. M. Ferry, Jr., Henry Pennoyer, John V. Hopkins, George Luther.

After which, the reports of the Viewing Committees were read.

MYRON HARRIS,
Secretary.

Tallmadge, January, 1859.

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List of Premiums awarded at the Third Annual Fair of the Ottawa County Agricultural Society, held at the Society's Grounds, near Lamont, September 22d and 23d, A. D. 1858.

CLASS A.

Farms and Gardens.

The Committee in this Class failed to perform their duty, and no premiums were awarded. The following entries were made:

1. Dr. Niles,.....Garden.
2. Allen Stoddard,.....Farm.
3. Bergen Smith,.....Garden.
4. Lemuel Peake,.....Farm.
5. S. Jackson,..... do.
6. Wm. M. Ferry, Jr.,.....Garden.

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CLASS B.

Horses.

Best stallion over 4 years old, J. Morse,	$5 00
2d best do., S. Waters,	2 00
Best brood mare, with foal afoot, J. McCarthy,	5 00
2d best do., G. J. Sherman,	3 00
Best gelding, 3 years old or upwards, F. Eastman,	2 00
2d best do., M. Keater,	1 00
3d best do., B. Rice,	1 00
Best gelding, 4 years old or upwards, Thos. Merrill,	3 00
Best single gelding, Dr. J. B. McNett,	3 00
Best single mare, C. W. Gray,	3 00
Best span working horses, Chas. Randall,	5 00
2d best do., G. W. Hastings,	3 00
Best span working mares, 4 years old, Wm. Thompson,	5 00
Best span matched mares, 4 years old, C. Danforth,	5 00
2d best span matched horses or mares, I. H. Maxfield,	3 00
Best span matched 3 year geldings, D. P., R. Roberts,	3 00
Best 2 year old colt, P. Maloy,	2 00
2d best do., C. Alford,	1 00
Best yearling colt, John Brown,	1 00
Best sucking colt, M. B. Millard,	1 00
2d best do., John Pintler,	50

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CLASS C.

Cattle.

Best native or blooded bull, 2 years and upwards, I. H. Maxfield,	$5 00
2d best do., A. Stoddard,	4 00
Best native or blooded bull, 1 year, J. H. Hard,	3 00
2d best do., Chas. Buck,	2 00
Best native or blooded bull, under 1 year, D. M. Angell,	2 00

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Best milch cow, 3 years and upwards, John Scott,..	$3 00
2d best do., C. S. Randall,.....	2 00
3d best do., W. Dewitt,.....	1 00
Best heifer, 2 years old, L. Peake,.....	2 00
2d best do., W. Dewitt,.....	1 00
3d best do., L. Peake,.....	50
Best yearling heifer, A. Stoddard,.....	1 50
2d best do., A. B. Sumner,.....	1 00
3d best do., C. S. Randall,.....	50
Best calf, A. Stoddard,.....	1 00
Best yoke working oxen, 5 years old and upwards, C. K. Dawley,.....	4 00
2d best do., A. Stoddard,.....	3 00
3d best do., H. Castle,.....	2 00
Best 4 year old steers, J. McCarthy,.....	3 00
2d best do., J. P. Johnson,.....	2 00
Best 3 year old steers, E. M. Hall,.....	2 00
2d best do., J. B. Lilly,.....	1 50
3d best do., J. Carlisle,.....	1 00
Best pair yearlings, L. Peake,.....	1 00
2d best do., A. Stoddard,.....	50
Best 3 year old cow, H. Carlisle,.....	4 00
Best yearling heifer, Chas. Buck,.....	1 50

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CLASS D.

Sheep.

Best buck over 1 year old, for meat, A. Bartholomew,	$3 00
2d best do., Geo. Starks,.....	2 00
Best buck over 1 year old, for wool, I. H. Maxfield,.	3 00
Best 2 ewes, valued for wool, Geo. Starks,.....	2 00
Best 2 ewes, valued for meat, A. Bartholomew,....	2 00
Best 2 ewe lambs, I. H. Maxfield,.....	2 00
2d best do., I. H. Maxfield,.....	1 00
Best fleece of wool prepared for market, Jas. Philips,	2 00

Mr. William Birdsall had a fine lot of New Oxford sheep on exhibition.

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CLASS E.

Swine.

Best boar one year old, Allen Stoddard,	$3 00
2d best do., I. W. Denton,	2 00
Best sow one year old, Allen Stoddard,	3 00
Best sow and pigs, I. O. Hedges,	3 00
2d best do., M. Hedges,	2 00

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CLASS F.

Poultry.

Best cock and 2 hens, W. Dewitt,	$1 00
2d best do., H. Beals,	50
Best coop of hens, L. Peake,	1 00
2d best do., M. Keater,	50
Best coop of turkeys, J. Malcolm,	1 00
2d best do., Jas. Philips,	75
3d best do., T. Eastman,	50
Best coop of ducks, C. S. Randall,	1 00

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CLASS G.

Farming Implements.

Best stump puller, E. Babcock,	$10 00
Best sod plow, S. H. Combs,	2 00
Best ox yoke, Geo. Starks,	3 00
2d best do., S. Robinson,	2 00
Best corn sheller, C. Alford,	2 00
Best cultivator, A. Stoddard,	1 00
Best corn cultivator, S. Jackson,	1 00
Best manure fork, A. Stoddard,	50
Best threshing machine, S. Jackson,	5 00

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CLASS H.

Dairy and other Products.

Best cheese, Benj. Luther,	$2 00
2d best do., E. Angel,	1 00
Best 10 lbs. butter, A. Stoddard,	2 00
2d best do., J. F. Cady,	1 00
Best loaf of bread, H. Beals,	1 00
2d best do., L. Peake,	50
Best loaf of brown bread, H. Beals,	1 00
2d best do., A. Stoddard,	50
Best sample honey in comb, A. Bartholomew,	1 00
2d best do., C. Alford,	50
Best hive of honey, Jas. Philips,	1 00
Best maple sugar in cake, J. S. Burton,	1 00
2d best do., A. P. Collar,	50
Best maple sugar, grained, Geo. Starks,	1 00
2d best do., J. S. Burton,	50

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CLASS I.

Domestic Products.

No report made by Committee in this Class.

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CLASS K.

Ornamental Needle Work, &c.

Best specimen of drawing, Miss A. Dickey,	$1 00
Best crochet collar, J. F. Cady,	50
Best ornamental needle work, Mrs. J. G. Colgrove,	1 00
2d best do., Mrs. M. B. Millard,	50
Best lace cape, Mrs. Hines,	50
Best patch-work quilt, Mrs. Wm. Thompson,	1 00
2d best do., E. M. Hall,	50
Best specimen ornamental leather work, Miss S. Angell,	1 00

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Best lamp mat, Mrs. A. W. Squiers,	$0 50
Best pair embroidered slippers, Miss Mary A. Rathbun,	1 00
Best oil painting, Mrs. J. G. Colgrove,	1 00
Best ornamental shell work, Mrs. J. C. Orvis,	1 00
Best silk bonnet, Mrs. Hines,	1 00
Best lace veil, A. P. Collar,	2 00

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CLASS L.

Fruit.

Best variety of winter apples, C. Alford,	$2 00
2d best do., D. M. Angel,	1 50
Best variety of fall apples, C. Alford,	2 00
2d best do., E. Angel,	1 50
Best six single pears, T. H. Cassell,	2 00
Best variety of pears, H. Pennoyer,	2 00
Greatest variety of peaches, H. T. Young,	2 00
2d greatest variety of do., C. Alford,	1 00
Best variety of plums, H. Pennoyer,	2 00
Best 6 plums, "	2 00
Most extensive collection of grapes, T. Eastman,	1 00
Best 3 quinces, T. Eastman,	1 00

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CLASS M.

Wines, Preserves and Pickles.

Best native grape wine, Benj. Smith,	$1 00
Best currant wine, "	1 00
2d best do., L. M. S. Smith,	50
Best strawberry wine, B. Smith,	1 00
Best preserved peaches, Mrs. B. Smith,	1 00
2d best do., Mrs. M. A. Harris,	50
Best preserved plums, Mrs. H. Pennoyer,	1 00
Best pickled peaches, Mrs. B. Smith,	1 00

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CLASS N.

Vegetables.

Best 3 heads cauliflower, Dan. Realey,	$0 50
Best 3 heads Broccoli, Dr. Niles,	50
Best 3 heads cabbage, B. Smith,	50
2d best do., Dr. Niles,	25
Best 6 carrots, Dan. Realey,	50
2d best do., B. Luther,	25
Best 6 tomatoes, E. M. Hall,	25
2d best do., J. S. Burton,	50
Best peck of onions, J. S. Burton,	50
2d best do., M. B. Millard,	25
Beck peck beans, B. Luther,	50
Best 3 heads cellery, B. Smith,	50
Best squash, "	50
Best 3 white table turnips, B. Smith,	50
Best pumpkin, S. H. Combs,	25
Best muskmelon, J. S. Burton,	25
Best watermelon, Dr. Niles,	25
Best peck table potatoes, G. W. Horlings,	25
Best ½ bushel kohl rabi, Dr. Niles,	50

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CLASS O.

Mechanics.

Best set of horse shoes, R. C. Lore,	$0 50
Best two horse wagon, Angell & Hathaway,	3 00
2d best do., Chas. Mickam,	2 00
Best flour barrel, F. H. Barlow,	50
Best tight barrel, "	50
Best 6 wagon spokes, B. C. Church,	50
Best sap bucket, B. L. Piper,	50
Best axe, Wm. Boyce,	50
Best fro, "	50
Best shingle shave, Wm. Boyce,	50

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CLASS P.

Drawing and Fine Arts.

Best specimen architectural drawing, R. Beals,....	$3 00
Best specimen job printing, H. S. Chubb,.....	1 00
Best model machinery, W. H. Ruggles,.....	2 00

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CLASS Q.

Field Crops—(Samples.)

Best bushel winter wheat, Patrick Maloy,.....	$2 00
2d best do., A. P. Collar,.....	1 00
Best bushel spring wheat, E. M. Hall,.....	1 00
2d best do., A. B. Sumner,.....	50
Best 12 ears yellow corn, C. S. Randall,.....	50
2d best do., J. B. Lellre,.....	25
Best 12 ears sweet, corn, M. B. Millard,.....	50
Best 12 ears dent corn, J. H. Maxfield,.....	50
Best bushel oats, M. B. Millard,.....	50
2d best do., J. Philips,.....	25
Best bushel barley, S. Jackson,.....	50
Best barrel flour, W. H. Mentor,.....	1 00
2d best do., T. B. Woodbury,.....	50
Best 10 lbs. flour, "	50

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CLASS R.

Field Crops.

In this Class were entered for premium:

No. 1. J. B. Lillie, 1 acre corn;

No. 2. Dr. Niles, ¼ acre white rutabagas.

The committee have failed to report.

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CLASS T.

Miscellaneous.

Best specimen raw silk, J. F. Cady,	$1 00
Best patent bar skip, W. Dewitt,	2 00
Best farm gate, "	1 00
Best carved walking cane, "	25
Best specimen linen thread, B. L. Piper,	1 00
Best pie melon, H. T. Young,	50
Specimen dressed flax, L. Twogood,	1 00
Best broad axe, Wm. Boyce,	50
Carpenters' adz, "	50
Wagon makers' shave, "	25
Large radish, G. W. Horlings,	25
Lot of peppers, J. S. Burton,	25

ADDRESS

Of Hon. M. L. Hopkins, delivered at the Annual Fair of the Ottawa County Agricultural Society, at the Fair Gronnds, near Lamont, September 23d, 1858.

Ladies and Gentlemen:

When I recollect that at our Annual Fair of last year, you had the privilege of listening to an address of rare merit and beauty, in which logic, comprehensiveness of thought, and chasteness of expression were combined to constitute true eloquence, it is with a due appreciation of my inability to keep up the high standard then erected, that I now address you. And if, from my own want of originality, and the fact that the address of last year in its comprehensiveness included all those topics of general interest connected with agriculture, I should avail myself of some suggestions contained in it, and elaborate them more fully, I trust that the author and the audience will suspend their censure.

We have again assembled to hold our yearly festival. We come with the choicest specimens of our skill, and the

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products of our toil; with offerings of our cattle, of grains, of plants, of fruits, and of flowers, to grace our gathering place, and honor the day of our annual meeting. It is the season of plenty, and although the hopes of the seed-time have not been entirely verified by the harvest, yet, from the abundance of that which our toil and the smile of God has given us, we have selected the choicest varieties for exhibition, that a just pride may be stimulated, a spirit of emulation and inquiry roused, and lessons of instruction and profit learned in the noblest of all the pursuits of human life. Men of all classes meet without any diversity of feeling or opinion, to express their sympathy and interest in the welfare of the Farmers of our county. There are numbers here who are not farmers, who have contributed since the formation of our society, with a liberality evincing a true interest in the object, and they, too, have come to see how Ottawa has progressed, and judge from the numbers here, and the exhibitions made, how far she has been redeemed from the wilderness, and subjected to civilization.

Each year brings added proofs of the agricultural capacities of our county, and its growth and settlement. The farmers in our eastern tier of towns have proven, beyond a peradventure, the excellence of their soil, and have, with sometimes true, and sometimes ironical sympathy, commiserated with the poor dwellers among the pineries in the western portion of our county. Their true sympathies we are grateful for, and to those disposed to be sarcastic, let me say that it is by no means certain, that the western half of Ottawa County, which has usually been regarded as worthless for farming, may not in time prove itself to be among our most valuable lands. Our pine lands invariably have a quick warm soil, producing a rapid growth if properly cultivated, and generally a fair crop. The immense marl beds scattered along our bayous and creeks, are peculiarly well adapted as a manure to the soils

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of our pineries, and the marl can be obtained in most cases by hauling a short distance, in exhaustible quantity.

The great obstacle to the improvement of our pineries is the stumps, which obstinately refuse to rot, or burn, and can only be disposed of by the use of the stump machine, which is to be the grand operator in bringing pine lands into favorable notice. Let it also be remembered that near the Lake our lands are well situated in affording facilities for market. For some eight miles from Grand Haven there are bayous jutting back from the river at short distances from each other, presenting many favorable locations of picturesque beauty, and affording a cheap and easy transit. The Big Bayou, or Spring Lake, has along its banks, coves, points, and headlands, where as much beauty of scenery may be found, as in any portion of our valley. Let me here hazard my reputation for judgment by predicting that within a score of years there will be among the pine lands around the Big Bayou as valuable farms as there are in the county, and repaying as well the capital and labor bestowed upon them. The Hollanders in the township nearest the Lake have proven in numerous cases that pine and hemlock lands will compare favorably in many respects with hard timber; that they are more easily tilled, and although they may require plaster and clover to keep them up, they can be managed with profit.

From this view it would seem that our county as a whole, is a privileged one for agricultural purposes, and the improvements being made in it yearly, and the facilities for market it now affords, are evidences that it is attracting attention, and we may reasonably and confidently expect its entire and speedy settlement and cultivation.

It will hardly be expected that one possessing so slight a knowledge of agriculture, either in theory or practice, as myself, should attempt to instruct practical and experienced farmers in their business. I am not here to make that attempt. The subjects of inquiry and comparison

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suggested by this exhibition teach a more useful lesson, and are suggestive of more practical thought than I can hope to present or enforce.

Turning, then, from the consideration of these subjects, wherein the welfare of agriculture is concerned in its progressive and pecuniary aspects, I shall call your attention to some of its influences and effects, upon the lives and characters of those engaged in it.

It is a fact so well known as to require no proof, that the vocations of men have an influence upon them, both physically and mentally. They affect the outward structure, and the inner man; their influence upon the first, is so fully established as to require no comment, and I will make use of but one illustration to prove their effect upon the last. Not long since I saw an article in the New York Observer, accounting for the notorious infidelity of the French army, by attributing it to the fact that the mathematical sciences are studied more deeply, and to a greater extent, than is usual elsewhere in military education. The exactness and precision required by these sciences, were such, and produced such an effect upon the mind, as to make it skeptical of all that was not capable of demonstration.

By this system of education, the intellectual, and not the moral man, is developed. He is brought and kept in such close contact with matter and its laws, that he believes what those laws and his own consciousness teach him, and rests there. Miracles form no part of his creed. He is an astronomer, and rejects as an impossibility the Biblical account of the sun standing still for Joshua. He is a philosopher, and disbelieves that Elijah went to heaven bodily, for the attraction of gravitation would place an injunction that could not be dissolved, on the whole procedure. He is a chemist, and cannot conceive how water could be changed into wine, even at the bidding of Omnipotence, and because of his education in material

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things, and his want of education in spiritual things, he pursues the teachings of his own Philosophy, and rejects the Revelation of God.

If it is said, that this is the effect of mental training and not chargeable to his vocation, let me answer, that it is his profession which makes such a system of education necessary, and is therefore the effect of choosing that profession. Other illustrations might be given, but they are not required to prove that there is a sympathy between man and his surroundings, affecting man, and his character, and imperticeptibly influencing his conduct.

Before proceeding to notice the indirect influence of his vocation upon the character of the farmer, I will call your attention to some of its effects as a business, and that which most readily suggests itself to the mind in connection with this, is, that it is an independent business. There is a dependence of one upon another, and of one class upon another, in all the relations of life—in Government, of one branch upon another, in our government, of the Union upon the States—of the States upon counties, and in the same manner to the towns, and finally to the citizen. Thus we can trace from the aggregate to the individual.

In business, there is a dependence of the manufacturer upon the producer, of the merchant upon all trades and classes, of the laborer upon the capitalist. But the farmer is the one upon whom all depend, and it is his produce which is indispensable to all. We know that the greater the number of consumers, and the more varied their wants and requirements, the greater the profits of the producer; and in this respect the farmer is dependent upon the success of his neighbors, and it is therefore his interest to encourage and stimulate enterprise and manufactures. Still, his business being less complex, less diversified, less connected with other interests, renders him pecuniarily less dependent.

As an example of this, take a manufacturer of lumber,

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and look at the variety of interests he is dependent upon for a profitable business. First, the low price of the logs he manufactures; next, the low price of labor; again, the low price of the provisions he consumes for his men and teams; next, his facilities for getting to market, and the low price of freights; and last, the market price. These are a part, and only a part, of the interests he has to guard, and to which he is subject in the prosecution of his business. He is compelled to deal with the logmen, the laborer, the merchant, the ship-owner, and chiefly with the farmer, while the farmer, on the other hand, selling to him all the time, is not compelled to buy. And so of all other manufacturing interests, each of them depending upon the agriculturist, for the provisions they consume, and he perhaps not trading a dollar with them.

Again, capitalists, manufacturers, and merchants are compelled to employ agents and influences outside of their legitimate channels of business. If a stock broker contracts for the delivery of a certain amount of stock within a specified time, he does so after a deliberate calculation of the chances as to what the stock would be worth at the time, if left to the natural and ordinary chances of business, and also, what can be done to depress or raise it, within that time—and the person to whom he sells, calculates the chances in the same manner. Then commences a strife, carried on with a tact, boldness, and cunning, that would in many instances make experienced diplomatists blush for their want of cunning and invention. These diverse interests, these contrary influences, brought to bear, influences of the press, influences upon men's fears, upon their hopes, upon their honesty and dishonesty, the influences of avarice, ambition, and pride—all the influences that unscrupulous men, possessed of keen perceptions, long trained, and well cultivated, can bring into activity, mingle together to create a contest of one against the other, which true honor would reject as unworthy a fair and

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regular business, and would look upon as a species of gambling, though not forbidden by legislation, and upheld by custom.

Thus we see, the more complex the business, the greater the necessity of employing a variety of agents, interests, and influences, to prosecute it successfully; and our history is filled with instances of the power that particular business interests have exerted upon our legislation.

Who does not recollect the enormous pressure brought to bear upon President Jackson by the capitalists, merchants, and manufacturers of the country when it was first definitely ascertained that he would not sign a bill rechartering the United States Bank. And when, to increase the pressure upon the President, the bank began to limit its issues, and contract its business, when the whole trade, commerce, and the manufacturing interest of the country was prostrate and suffering in consequence, there came from almost every city in our Union a cry of distress, which was echoed in the Halls of Congress, heightened, and intensified, by the fervid eloquence of Henry Clay, and enforced by the strong, grand reasoning powers of Daniel Webster.

They were the leading champions of the suffering interests of the capitalists of the country, and their sincerity and honesty of purpose, no less than their commanding talents, gave an almost irresistible power to their onsets upon the President. The classes whose interests they advocated were the ones who were suffering most; they were the first to resist and the last to yield. In all that long and desperate struggle they bore themselves as men who could not be conquered. Their skill and courage were such that those opposed to them were compelled to admire and respect them, and when the battle was over, it is the teaching of history, that the country, not the cities, not the centres of trade and commerce,—not the seats of manufactories,—not where wealth and fashion congregated,—

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or in crowded marts, where the influence of capital could be brought most efficiently to operate,—with a few exceptions, I say, it was shown that it was not there, nor among these, but away from them, and where the hard toil of the farmer had created a capital that was real, where his vocation rendered him independent of the pressure brought to bear upon others,—it was here, literally, without any figure of speech, under God's blue sky, and on our country's green fields, with farmers for soldiers, and ballots for weapons, that the victory was won. And it was won by them, not because their judgment was clearer, not because they were more honest and patriotic than those pursuing other business, or because they had better opportunities for discerning the effects of their action, for in this last respect perhaps they were deficient, but it was because the agencies brought to bear upon others could not affect them—because their business was complete in itself, and needed no help from extraordinary stimulants, consequently, the chain of dependence could not reach them. Its links might bind the banker to the government, the manufacturer to the banker, the merchant to the manufacturer, the laborer to all.

But there was one class it failed to enclose, one class which was independent of all these interests, and sufficiently strong to defeat them all.

Again, the farmer is an independent man in the insurance which his business affords him against bankruptcy; and this insurance arises partly from reasons already considered, the completeness of his business in itself, and its independence of other interests, and partly from the indestructible nature of his property. His farm is a part of the earth, a portion of God's handwork that can only be destroyed by the same Almighty power that created it; and unless a man is foolish enough to select a farm with so large a water power on it, that it occasionally covers the whole, or buys one in a location similar to Grand Haven,

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where the sand is so loose that a railroad cannot be built on it until the ground has been hooped, he has something that has been formed to remain. It cannot be consumed by lightning, or carried away by flood, destroyed by fire, or swept from its fastenings by a tempest. It is not only safe against accidents, but it is secure against destruction by the elements. Nor is this his only insurance. So long as the farmer diligently pursues his legitimate business, and that alone, he is insured, not only against loss, but against the ruin which is, from a thousand causes, constantly impending over those engaged in other and more hazardous business pursuits.

The commencement of our late panic was traced to the failure of the Ohio Life and Trust Company, for some millions of dollars. Its fall necessarily involved that of those whose funds it was using, and men worth tens and hundreds of thousands of dollars, were in an instant reduced to bankruptcy. The complicated interests, the chain of dependence to which I have alluded, and which extended through the whole country, was here suddenly broken, and all the innumerable and immense interests hanging upon it were cast adrift to be wrecked or saved, as the men involved with those interests had the skill and opportunity to rescue, or the misfortune to lose them.

In the great commercial centre of our country, old and well established firms, conducted by prudent and sagacious men, who had labored for years to secure a competency, found themselves involved in the common disaster. No precaution which experience or prudence could invent, would save them from the wreck, and place their feet on a firm foundation. Protested notes, failing insurance offices, broken banks, and entire stagnation in business were burdens too mighty to be borne, and proud and opulent merchants were forced to look the common doom in the face and see bankruptcy written on their walls—were made to feel what the Preacher had so often told them—that the

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things of this earth are transitory, and some of them, living in fifth avenue palaces, had another clerical saying very forcibly impressed on their memory, by the aid of a sheriff, with a writ of ejectment—"that they have here no abiding place."

These disasters reached, but could not overwhelm the farmer; he could look on without fear; the storm raging outside came not to his harbor, reached not to his door. He knew that his chances for a market were as favorable as they had been, and that though for a short time he might be compelled to practice greater economy, beyond this he had no fear. His home was left, his farm was left, and his business, though it might be somewhat depressed was still the best and the safest of our industrial employments. The wreck of hope, the life of care, the fear of want, the harassing of officers, the clamor of creditors—all which combined have within the past two years driven many of our best business men to insanity, and some to suicide, these torments of the commercial and mercantile life he was free from.

From the considerations last presented, we may infer that the agriculturist enjoys an independence and immunity from care, greater than those pursuing other business, in being placed above the fear of actual privation and want, and above the necessity of depending upon his labor alone for subsistence. I do not mean by this that farmers in ordinary circumstances are not compelled to labor, but that they are beyond the necessity of being laborers in the general acceptation of the term. Let it not be supposed that I think laboring for a livelihood is not reputable, or that a person employed by others is entitled to less consideration than if he was his own employer. I have read many of the pretty sayings which are current among us on this topic, but I do not know, nor do I believe, that labor in the abstract is a blessing, nor do I think the Almighty designed it as a blessing, when, upon the expul-

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sion of Adam from Eden he pronounced upon him the stern decree—"Cursed is the ground for thy sake, in the sweat of thy face shalt thou eat bread till thou return unto the ground." Nor in the labor itself, but in its result, are we to look for its virtues.

I do not believe that the man who has no resource against famine but the strength of his muscles—who is dependent upon another for employment and wages—who often sees his family suffering, and is unable to supply their wants—who bears all the toils, and enjoys none of the pleasures of life—who learns in the stern school of experience to distrust hope, and look at the dark side, can regard the necessity which compels such exertions and privations is a blessing. It was not intended as one, and the farmer, in pursuing his vocation, is using the means ordained by the Almighty to avert the curse, and has thus, indirectly, a pledge from him that his labors shall be crowned with success, so far as the sustaining of life is concerned, and that he shall be guarded against such extreme necessity as I have described, demanding such penance for the privilege of existence.

I have endeavored to present to you some of the advantages possessed by farmers in their business, and some of the reasons for their being pecuniarily less dependent, than other classes.

Let me now ask you to look at some of the indirect influences which their vocation would naturally have upon them; and here it will be readily seen that the outward independence they enjoy would be very likely to encourage and stimulate an independence of character and action. Independence of thought, is, to a greater or less degree, inherent in man, but grows with his growth, and strengthens with his strength, in proportion to the manner of his education, and the circumstances surrounding him in life, and subjecting him to their influence. If, then, the Farmer is more independent than other classes, in the

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various respects which I have considered—in the completeness of his business in itself—in being disconnected with other interests—in the insurance his vocation grants him—in the dependence of all upon him—in his removal from the direct contact with public opinion in the masses, he being from these various causes less subject to influence, can there be a doubt that all this has a corresponding influence upon his mind, enabling him to judge more clearly, and act more independently, because his judgment is less liable to be swayed by his interest.

Another tendency of Agriculture is to make men honest, by removing them from many of the temptations that surround men doing other business. In our great centres of trade and commerce, where so much sin and vice abound, where the evil of men's natures are catered to, and the panders of vice are seeking victims—where all the avenues of guilt are thrown open, and crowded throngs are daily pressing their way along them, a man has indeed to be armed strong in honesty, if amidst the temptations surrounding him, he remains unmoved and pure.

From all this temptation the farmer is exempt. Occupied with his vocation, and away from the influence of corruption, his business is of that character that requires no intrigue of chances, or combination of influence to farther it. He must be skillful in his business; but that skill, is the skill of the artisan; of a man who knows how to perform a certain kind of labor in a given method, and is as different from that of the merchant or commercial man, as the skill of the politician is from that of the blacksmith. The farmer's warfare and study is the soil he tills, and the climate he lives in. The earth beneath and the sky above him, these are his friends or foes, as he calculates judiciously upon them, and as the seasons are adverse or prosperous.

With the scheming of politicians, the manœuvering of brokers and stock jobbers, the far reaching calculations of

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commercial speculators, in fact with any business requiring a nice calculation of men's wants, characters, and conditions, he has nothing to do. The market for his produce, more than that of all others, is regarded by the inevitable law of supply and demand, and removed from the necessity of intrigue, which enters more or less largely into all the business of life, (dignified frequently by the name of policy,) the farmer preserves a simplicity of honesty, that can hardly be found to as great an extent in any other class of our people.

I said, he preserved a simplicity of honesty. True honesty is always open, simple, frank; but as there is one glory of the sun, another of the moon, and another of the stars, so, there is honesty itself, another honesty of the merchant, another of the stock jobber, another of the politician, and another of the lawyer. The lawyer is last, and, though I digress to do it, I must acknowledge from the little experience I have had with them, they are not least, and I think custom has made it lawful to give them rather more credit for rascality than they are entitled to. Be this as it may, the craft, cunning, and secrecy, frequently essential to men of other business and professions, recognized as legitimate and necessary, are of no use to the farmer, and he, consequently, escapes the influence, which they must exert to a greater or less extent upon the characters of those who use them.

Shall it then be said, he is only honest, because he is not tempted, because he has not the "motive and the cue" for dishonesty that other men have? Let me answer, if this charge is made, that the farmer, whether his vocation be one of necessity or choice, is, by being kept aloof from temptation, forming a character, and acquiring habits, which will in time become so permanent, that he may be placed in the midst of evil and will not fall; and that any man, until his character is thus established, needs to offer

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in sincerity and fear, the prayer Jesus taught, "Lead us not into temptation, but deliver us from evil."

That farming has a tendency to promote and foster habits of industry, is so apparent, that comment upon it is useless, and I pass to consider briefly the influence it indirectly exerts in the promotion of religious sentiment and feelings.

The farmer is the student of nature; and an acquaintance with her laws, is an essential requisite to his business. And he must indeed be a stolid and careless observer, if the unvarying order and regularity she is constantly pressing upon his attention, fail to convince him of the existence of a grand and Omnipotent Architect: the beauty she everywhere presents, the nice adaptation of the means to the end—the mysterious agencies employed by her to promote vegetation in its infinite varieties—agencies so minute and complex, as to defy to a great extent human skill and science to understand and explain; the annual return of the seasons with their varying degrees of heat and cold, and all the mighty and marvelous machinery, used by the Creator in his government of the Universe—all these are matters of every day experience with him.

Placed as he is, beyond the strife and passions of the multitude, and looking to nature, and not to man for his subsistence—relying upon God and His laws, instead of man and his necessities, for his daily bread, how can it be otherwise, than that his household Deity should be the Deity of the Universe—that his thoughts should be directed to him—His guidance be invoked by him and his gratitude should ascend to Him, that the sentiments of Thompson in the closing Hymn to the Seasons should be his:

"These as they change, almighty Father, these,
Are but the varied God. The rolling year
Is full of Thee,—Forth, in the pleasing spring,
Thy beauty walks,—Thy tenderness and love.

* * * * *

Then comes Thy glory in the summer months

With light and heat refulgent.—Then Thy sun
Shoots full perfection through the swelling year

* * * * *

Thy bounty shines in autumn unconfined
And spreads a common feast for all that lives.
In winter, awful Thou.—With clouds and storms
Around Thee thrown—tempest o'er tempest rolled :
Majestic darkness! On the whirlwinds' wing
Riding sublime, Thou bidst the world adore,
And humblest nature with thy northern blast."

Thus we see, that among the many indirect influences of agriculture upon the character of him engaged in it, it has a tendency to make him an independent, honest, industrious, and religious man. What more is wanted to make a perfect man?

There is one thing, yea, two things lacking. In addition to all this, we want a man with a warm heart, and a cultivated brain. Then we shall have a man, whose life is gentle, and the elements so mixed in him, that nature can stand up, and say to all the world, "This is a man—such a man as God likes to see."

In addition to those enumerated, there are many other influences exerted upon the farmer, which are so silent and imperceptible in their approach and abiding, that he wots not of them. There are the habits of temperance and regularity, unconsciously formed; habits of practical thinking, instead of wandering and vague imagination; for the Farmer is eminently a practical man; habits of kindness towards animals, and study of their wants, disposition, and instincts, habits of frugality and carefulness; not penuriousness, but a just and commendable economy, all these are characteristics of Farmers, and can be found to a greater extent among them, than among any other class.

But, if farming frees those engaged in it from many errors and temptations, to which others are subject, it also deprives them of many advantages and conveniences, which those living in cities possess.

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The want of educational facilities is one of their inconveniences; it is an inconvenience, not a necessary privation, and can be overcome. It is undoubtedly true, that Farmers, in point of intelligence, will not compare favorably with business men in cities, possessing the same amount of capital. There are various reasons for this; one of the most prominent is, the necessity of business men keeping themselves well posted in all the departments of their trade; and we have seen that trading and manufacturing are more complex business than farming. Those engaged in them, must, to do business properly, have a variety of information upon many subjects, in which the Farmer is not practically interested.

The newspaper, the state of the markets, the condition and prices of various stocks, the probable wants of our own country in regard to produce and manufactures, the wants of foreign countries, and the quantities on hand to supply them; the commercial man, the merchant, and the capitalist must be well posted with regard to all these things, or he cannot conduct his business without loss.

Again, the number of schools in cities, combining all the latest improvements of apparatus for explaining the science taught, and fixing the attention of the pupils;—the public libraries and reading rooms, the lectures delivered by our most eminent scholars, statesmen, and orators—the daily contact with refined and educated men, the variety of amusements and recreations, which persons living in cities can have, and which are essential to the proper enjoyment of life, are advantages which Farmers generally are denied.

I have no time to pursue the various trains of thought suggested by these last considerations, and will close by calling your attention to one prominent effect of agriculture upon our society and government;--which is, that it has been the grand agent of civilization, necessarily preceding it, and the only means that has yet, or ever will be

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found, available in a new country for its permanent reclamation and settlement. Our history illustrates fully the folly of attempting to develop the resources of a country, unless the farmer leads the van of settlement and lays the basis of its growth. In the settlement of our Western States we can fairly realize the overwhelming importance of agricultural interest.

When we see that the farmer must precede those of all other pursuits whatever, that it is only after he has made the country tenable, that mechanics, business, and professional men can live—then we can understand, that the farmer builds our cities, steamboats, railroads, telegraphs, that it is his occupation that renders necessary, and directly or indirectly employs all the ponderous machinery that this age of invention and improvement can boast. It is possible for the farmer to live and do business without these appliances, but impossible for them to exist without him. Thus we see that agriculture carries education and refinement where they never existed before, plants them in the forest, rudely at first but tending them with care, until they produce fruit, in all the manifold relations of well regulated society and government.

Let the farmers of our country remember with pride, when they are told of our progress as a nation—a progress so vast and rapid that imagination scarcely comprehends its progress, that has reclaimed the forest, and has braved the hardships and dangers of border life, the sickness and privations attendant upon the settlement of a new country, the loss of social intercourse in separation from friend and home, I say, let them remember with pride, that this progress so rapid in its march, yet so grand and enduring in its results, accomplished by so much sacrifice, is all owing to them.

To their enterprise, their perseverance, their toil, is to be ascribed the redemption of a continent and its transformation from savage to civilized life. It is before them, that

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the savage and the forest have receded. It is by them that beauty, order and civilization have been placed in their stead.

There are many here who were pioneers in these forests, and can fully realize the necessity of the farmer being the advance guard in the army of civilization. There are many here who have borne all I have depicted in first making their homes on this River. The sickness, the privation, the toil, we have known and felt. Is this all? Ah, no! We have borne more. The hearth stone has been made desolate by death, and those that endured, and suffered, and struggled with us, and because of this were the more endeared to us, whom in our souls we had hoped would enjoy with us whatever there might be of triumph, these are gone, and in the place of the brave warm hearts, that were dear to us as the life blood in our veins, there is left but the ashes within the mouldering coffin, and the sods that cover their graves. No, there is more left. Memory has daguerreotyped so vividly, that not until we lie down by them, will we forget the form or features they wore, or the strong and patient endurance shown by them in the settlement of our county.

We are now reaping the fruits of those early trials—we are enjoying that for which we struggled, and the Ottawa of 1858 is so changed from that of 1838, that, could the Pioneers who are now sleeping their last sleep, look upon our county to-day, they would say: "It was not in vain we made our homes in the forest, and gave our lives to make it bud and blossom." Let us mingle our sorrow for the dead with joy for the brightening prospects of the living, and let us also faithfully cultivate the virtues, which I have attempted to prove agriculture has a tendency to promote, and thus from the contemplation of morality we shall rise to its practice, and shall

"So live, that when our summons comes to join
The innumerable caravan that moves
To that mysterious realm where each shall take

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His chamber in the silent halls of death,
We go not like the quary slave at night,
Scourged to his dungeon, but, sustained and soothed
By an unfaltering trust, approach the grave,
Like one who wraps the drapery of his couch
About him, and lies down to pleasant dreams."

SAGINAW COUNTY.

No report.

SANILAC COUNTY.

No report.

SCHOOLCRAFT COUNTY.

No report.

ST. CLAIR COUNTY.

No report.

ST. JOSEPH COUNTY.

R. F. JOHNSTONE, Esq., *Secretary Michigan State Agricultural Society:*

SIR—As Secretary of the St. Joseph County Agricultural Society, I would report as follows the doings of the Society for the year ending December 25th, 1858:

On the 17th day of March, 1858, the annual meeting of the St. Joseph Co. Agricultural Society was held at the Court House, in Centreville, according to notice. The meeting was called to order by George Carman, President, after which the Treasurer's report was called for, and the following report was then made by William Hutchinson, Treasurer:

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William Hutchinson, Treasurer, in account with St. Joseph County Agricultural Society.

CREDIT.

1857.		
To cash on hand,	$ 0	78
June 27. Of E. F. Pierce, for pasture,	1	50
July 16. Of Joseph Horton, for pasture,		25
Oct. 15. Received on sale of tickets,	442	77
" " " "		50
" " " "	1	00
" " " "	3	50
Amount appropriated by Supervisors,	216	52
Total,	$666	82

DEBIT.

Mar. 20. Cash paid for transportation of books,	$ 1	62
Sept. 14. Paid for blank book for Society,		70
Oct. 15. Harvey Cady, for tending gate,	4	00
" 15. R. F. Johnstone, for Address,	15	00
" 15. O. Anthony and others, for tending gates,	14	00
" 15. Dougherty and White, night watch,	4	00
" 15. James Fenn, services in ticket office,	4	00
" 15. J. J. Sadler, " " "	4	00
" 15. H. H. Kilmore, carpenter work,	12	38
" 15. H. Cady, on sundry accounts,	32	22
" 15. Amount of premiums for 1857,	301	62
" 15. A. G. Trumble, old account,	5	50
" 15. E. White, old account,	20	00
" 15. N. C. Bouton, for printing,	13	50
" 15. S. Cady, for feed for stock,	8	20
" 15. John Wolf, attendance in Fair house,	2	00
" 15. Geo. Talbot, on debt on Fair ground,	216	52
" 15. H. Cady, on account,	4	00
" Cash on hand to balance,	3	56
Total,	$666	82

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On motion, C. H. Starr was then called upon to report his doings on collecting subscriptions for this Society, which report was satisfactory, and placed on file.

On motion, it was ordered that premiums not called for by the next annual meeting after the Fair, shall not be paid, and that the same shall be forfeited to the said Society.

The following persons were then elected officers of the Society for the year 1858:

President—Comfort Tyler, Colon.

Vice President—Powell C. Lown, Florence.

Recording Secretary—Edmund Stears, Centreville.

Corresponding Secretary—C. H. Starr.

Executive Committee—J. B. Dimmick, Lockport; David Knox, Sturgis; Hiram Draper, Colon; J. H. Gardner, Lockport; David Oakes, Sherman.

C. H. Starr was then allowed $30 for advances made and services rendered in collecting.

On motion, he was then released from further duties of collecting for said Society.

P. M. Gray was allowed $4 on account.

On motion, adjourned to the first Saturday of April next, at 2 o'clock P. M.

—

On the 3d day of April, 1858, the Executive Committee of the St. Joseph County Agricultural Society met at the Court House, in Centreville, at which time Harvey Cady was elected Recording Secretary in place of Edmund Stears, resigned.

On motion, J. W. Talbot was allowed $4 92 old account, for nails.

On motion, it was determined that the next Annual Fair be held on the 29th and 30th days of September next, and Hiram Draper, J. H. Gardner and P. C. Lown were

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appointed a committee to prepare a premium list for the next Fair, and present the same at the next meeting.

It was determined that the price of membership tickets shall be fifty cents each, and the price of single tickets twenty cents each.

H. Cady was allowed $5 for his services as Secretary for the last year.

Adjourned to meet on the first day of May next, at 10 o'clock A. M., at the Court House, in Centreville.

—

On the first day of May, 1858, the Executive Committee of the St. Joseph County Agricultural Society met at the Court House, in Centreville, at which a Premium List for the next Fair was adopted, and the Secretary was requested to furnish each press in the county a copy for publication, provided they will publish the same without charge.

Samuel Chipman and Alfred B. Moore were appointed marshals for the Fairs.

Adjourned to meet at the Court House, in Centreville, on the 28th day of August next, at 10 o'clock A. M.

—

On the 28th day of August, 1858, the Executive Committee of the St. Joseph County Agricultural Society met at the Court House, in Centreville, Comfort Tyler, President, in the chair.

J. B. Dimmick was appointed to take charge of the cattle at the ensuing Fair; Hiram Draper to take charge of and arrange the sheep and hogs; C. H. Starr to take charge of the Fair House and arrange the articles for exhibition; and H. Cady was directed to procure suitable persons as assistants in the Secretary's office, and also to procure three thousand feet of lumber for seats, and to arrange the same on the Fair Ground.

President Tyler reported that he had engaged the ser-

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vices of Hon. Henry Waldron, of Hillsdale, to deliver the annual address.

It was voted on and determined that Milo Powell, of Cass county, should no longer remain a member of this Society.

On motion, adjourned to meet on the second day of October, at 10 o'clock A. M., at the Court House in Centreville.

HARVEY CADY, *Secretary.*

—

ANNUAL FAIR FOR 1858.

The Annual Fair held on the 29th and 30th days of September, 1858, had a larger attendance than usuul; amount of stock not as large as last year, but of a better quality: farm implements much better than usual. All things considered, it was a successful Fair.

The number of entries of stock and articles for exhibition were as follows:

Class 1. Short Horns,	13
Class 2. Devons,	9
Class 3. Cross Blood,	1
Class 4. Grades and natives,	18
Class 5. Work oxen,	9
Class 6. Blood horses,	14
Class 7. Horses for all work,	34
Class 7. Horses two years old,	22
Class 8. Horses to be shown in harness,	19
Class 9. Sheep, Spanish merino,	20
Class 10. Sheep, French merino,	4
Class 11. Cross of French and Spanish sheep,	4
Class 12. Long wool sheep,	5
Class 13. French and Spanish sheep with native,	3
Class 14. Swine,	4
Class 15. Poultry,	1
Class 16. Farm implements,	34
Class 17. Cabinet work and mechanic arts,	8

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Class 18.	Domestic manufactures,	35
Class 19.	Butter, cheese, bread and honey,	26
Class 20.	Fruit,	7
Class 21.	Vegetables,	18
Class 22.	Fancy work, drawings, &c.,	28
Class 23.	Paintings,	4
Class 24.	Grain, flour and seeds,	14
Class 25.	Field crops, none entered.	
Class 26.	Farms, none entered.	
Class 27.	Miscellaneous articles,	40
	Total entries,	394

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Receipts and Expenditures of the St. Joseph County Agricultural Society for the year 1858.

RECEIPTS.

Cash on hand,	$ 3 56
Received of Spitzer for use of fair ground,	10 00
" for tickets sold,	553 00
Appropriated by Board of Supervisors for 1857,	547 24
Received of H. Cady, for hay sold,	3 30
Received of P. Smith, interest on note,	8 74
Total receipts,	$1,125 84

EXPENDITURES.

C. H. Starr, on old account,	$ 36 74
J. Talbot, committee books,	84
Wm. Secord, tending gate at fair,	2 50
Stephen Sherman, on account,	50
S. A. Marvin, tending gate at fair,	3 00
H. Cady, lumber for seats at fair house,	24 00
John Winecoop, for tending gate at fair,	2 50
H. D. Benjamin, " " "	2 50
Wm. G. Woodworth, tending fair house,	3 00
H. Cady, lumber and services at fair,	15 30
" on old order,	1 50

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James Fenn, selling tickets at fair,.....	$ 3 00
J. W. Talbot, rope, ...	4 76
Wm. Sadler, assisting Secretary at fair,.....	3 00
Asa Haynes, tending gate and night watch,...	5 00
Wm. Leland, night watch, ...	2 00
Alanson Haynes, tending gate,.....	3 00
J. Bennett, on old account,.....	84 06
S. M. Oviatt, tending fair grounds,.....	3 00
Cyrus Buel, tending gate at fair, ...	3 00
S. Chipman, marshal during fair, ...	3 00
J. W. Talbot, on old account,.....	4 92
H. W. Hampson, labor on fair ground,.....	6 00
Sydney Chase, tending gate at fair,.....	3 00
N. C. Bouten, for printing,..... :.....	18 50
E. White, on old account,.....	27 82
Amount of premiums awarded for 1858,.....	244 00
Silas Cady, hay for fair,.....	9 60
G. Talbot, in full on mortgage on fair ground,.	251 81
P. M. Smith, on Goss' old account,.....	208 74
Cyrus Buel, work on ticket office,.....	1 13
D. & J. Wolf, pumpkins for fair,.....	3 75
P. M. Smith, on Goss' old account,.....	130 00
Total expenditures,.....	$1,115 47
Total receipts.....	1,125 84
Balance in the treasury Dec. 25, 1858,.....	$10 37

COMFORT TYLER,
President.

HARVEY CADY, *Secretary.*

TUSCOLA COUNTY.

No report.

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VAN BUREN COUNTY.

The Van Buren County Agricultural Society held its Eighth Annual Fair at Paw Paw, on the 11th and 12th of October, 1858, at which a large list of premiums were awarded.

The officers for the ensuing year are as follows:

President—Jay R. Munro.

Secretary—O. H. P. Sheldon.

Treasurer—George Adams.

Executive Committee—E. O. Briggs, G. F. Harrington, C. M. Curtiss, Orrin Sisson.

JAY R. MUNRO,
President.

O. H. P. SHELDON, *Secretary.*

WASHTENAW COUNTY.

R. F. JOHNSTONE, Esq., *Secretary State Agr'l Society:*

SIR—I herewith send you the Annual Report of our Society for 1858, according to a resolution of the Board of Managers, passed on the 1st instant.

Very respectfully,

J. L. TAPPAN,
Corresponding Secretary.

Ann Arbor, Feb. 4, 1860.

The Tenth Annual Fair was held at Ann Arbor, October 5th, 6th and 7th, 1858, and was remarkably well attended. Owing to the length of time which has elapsed since the Fair took place, I am obliged to send you the following extracts instead of an original report.

The Tenth Annual Fair of the Washtenaw County Agricultural and Horticultural Society commenced in this city yesterday, the 5th inst., and will close to-morrow afternoon. The members and friends of the Society were

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bringing in their stock and articles for exhibition rapidly all day yesterday, the weather being very propitious. Up to three o'clock yesterday afternoon, there had been 834 entries, consisting of—

Horses,	252
Cattle,	112
Sheep,	87
Farm Implements,	18
Domestic manufactures,	64
Butter, cheese, &c.,	25
Poultry,	21
Swine,	23
Fruits and vegetables,	140
Needle work, &c.,	30
Paintings,	11
Flowers,	5
Miscellaneous,	46
Total,	834

Several hundred more entries have been made and will be made. The exhibition of cattle, sheep and swine may be called fine; and the exhibition of horses is also good. The season has been bad for fruits, and not very good for vegetables. There are some very good apples and grapes —but no pears, peaches, or plums. There are also some fine specimens of vegetables, but they are not numerous, and none of a size so extraordinary as were exhibited last year.

Among the agricultural implements may be noted a reaper, mower, corn sheller, corn husker, stump machine, horse rake, corn planter, cultivators, etc.

There are many fine articles of needle work and domestic manufactures by the ladies; many fine stoves; some carriages, wagons and buggies; but in many departments the manufactured articles exhibited are not very numerous.

SECOND DAY.—Nearly three hundred entries have been

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made since yesterday at 3 o'clock P. M., making in all about 1,100. The greatest part of the domestic manufactures, fruit, vegetables and flowers, have been entered and set up since three o'clock of the first day. There is now a very fine show of vegetables and grains, and quite a respectable show of fruits and flowers, including some peaches, pears and grapes—but the quantity, variety and size of the fruits generally, will not compare with those of last year.

In every respect except fruits, the exhibition is a fine one, quite equal to any heretofore had in this county, and will compare favorably with the State Fair, of this, or any former year, in most respects, except mere numbers and quantities, in which it does not fall much behind. The number of entries at the State Fair last week, as reported in the *Free Press*, was 2,029, and at the State Fair in 1857, but 1,539. The weather being very mild and favorable, there is a dense crowd of people in and about the Fair grounds. Perhaps so large a concourse of people has never been witnessed at a County Fair in Washtenaw county.—*Ann Arbor Journal.*

The Tenth Annual Fair of the Washtenaw County Agricultural and Horticultural Society has been held in our city the present week. Tuesday and Wednesday, the first two days, were auspicious and could not have been bettered. Wednesday night, however, a severe storm came up, and yesterday the wind told disagreeable tales in the ears of all who visited the grounds.

Without going into detail, we may say that the Fair is rated a success. Both the receipts and the entries are materially in excess of last year. We notice the several departments briefly.

CATTLE.

Number of entries large, and more cattle on the ground than we have seen at any former County Fair, including some very fine specimens of blooded stock.

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HORSES.

A fine display in each class, stallions, single, matched, etc., etc. The horse parade was large and in fine order, and was constantly in use.

SHEEP.

About sixty pens were filled, and in our rounds we noticed some beautiful specimens. This department, it is said, has not been rivaled before.

FLORAL HALL,

Was well filled, with beautiful flowers, tempting fruits, and fine samples of fine arts, domestic manufactures, etc.

The fruit stands were not as well filled as last year, but there were choice specimens of apples, pears, peaches and grapes. The ladies are entitled to great credit for the taste manifested in the arrangement of this department.

IN AGRICULTURAL HALL

There was a good show of vegetables, grains, butter, cheese, etc., an evidence that our farmers, their wives and daughters, take a deep interest in these Fairs.

There was also a good show of agricultural implements, wagons and carriages, swine, poultry, etc.

Of People there was a grand "turn out," and the grounds on Wednesday were a mass of active, restless life. We have not seen a larger collection on any occasion in the county.

The Address, by the Rev. J. M. Gregory, was to be delivered yesterday, which day was also assigned for announcing the premiums and electing officers.

Much credit is due to the officers of the Society for providing excellent grounds, buildings, and other accommodations for exhibitors and visitors.—*Michigan Argus.*

Our paper is so crowded with important matter, that we can only say of the late Fair, it was the largest in its entries, in the numbers attending it, and in its receipts for tickets sold, that the people of Washtenaw have ever witnessed. Our readers can form something of an estimate

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of the numbers present Wednesday, when we say that over five hundred dollars worth of single tickets were sold on that day.—*Local News and Advertiser.*

The following is a list of the officers of the Society under whose direction the Fair was held:

OFFICERS FOR 1858.

President—Gen. Asa Williams.

Vice Presidents—N. A. Phelps, T. White, A. H. Markham, H. Ticknor.

Secretary—L. Davis.

Treasurer—C. H. Town.

Executive Committee—S. Thompson, W. S. Waterman, H. Compton, H. Thompson, P. Winegar, W. S. Maynard, L. Foster, E. W. Whitmore, P. Cook, E. Boyden, B. W. Wait, H. Booth, W. H. Pattison, N. Sly, S. D. Whittaker, J. R. McLean, D. W. Palmer, J. K. Yocum, James Clark, J. J. Robison, W. S. Carr.

Committee of Arrangements—Harrison W. Goodrich.

The Annual Address, which was expected from Hon. J. M. Gregory, was unfortunately not delivered, owing to the inclemency of the weather. I hope, however, to send you this address, for publication in the Transactions, either with this, or the next report.

The receipts at the Fair amounted to $1,326 38, all of which was expended for premiums and expenses.

On Thursday, October 8th, which was the last day of the Fair, the election of officers took place, with the following result:

OFFICERS FOR 1859.

President—Horace Carpenter, Esq., Pittsfield.

Secretary—Newton Sheldon, Esq., Lodi.

Treasurer—Chauncey H. Millen, Ann Arbor.

Vice Presidents—J. G. Leland, Northfield; Calvin Wheeler, Salem; J. C. Winans, Sylvan; N. A. Phelps, Scio.

Executive Committee—J. B. Vanatta, Salem; W. S. Waterman, Superior; Henry Compton, Ypsilanti City; H.

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Thompson, Augusta; E. Basom, York; M. M. Merrill, Pittsfield; G. D. Hill, Ann Arbor Town; Moses Rogers, Ann Arbor City; Zenas Burd, Northfield; E. L. Boyden, Webster; C. S. Gregory, Scio; Randolph Davis, Lodi; R. Stebbins, Saline; D. W. Palmer, Bridgewater; Asa Williams, Lima: Ormand Clarke, Lyndon; H. C. Boyd, Sylvan; E. Arnold, Dexter; Andrew Robison, Sharon; W. S. Carr, Manchester; W. F. Osius, Freedom; E. D. Lay, Ypsilanti.

Business Committee—C. S. Gregory, J. G. Leland, Moses Rogers, Wm. S. Maynard, Lyman S. Wood.

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